Progress on the Implementation of IC 16-38-4-7 (Birth Problems Registry) as amended in First Regular Session 112th General Assembly (2001) Reporting Period: July 2008 – June 2009

The Indiana Birth Defects and Problems Registry is a population-based surveillance system that seeks to promote fetal, infant, and child health. The purpose of the Registry is to prevent birth defects and childhood developmental disabilities and to enhance the quality of life of affected Indiana residents.

Birth defects are conditions present at birth that affect the structure or function of an infant's body. They can cause physical, mental, or medical problems. Approximately 1 in 33 babies is born with a major birth defect each year in the United States. Birth defects are the leading cause of death in infants. Birth defects also account for 30% of all pediatric hospital admissions (*National Vital Statistic Report*, vol. 52, 2003). Annual costs for birth defect-related conditions are nearly \$2.5 billion (*Morbidity and Mortality Weekly Report*, January 19, 2007). Some of these causes are entirely preventable, while others could be identified early and treated or managed in order to improve the quality of life of affected infants and their families.

The 1986 Indiana General Assembly enacted a law (IC 16-4-10-6) to establish the Birth Problems Registry by January 1, 1987. In 2001, the Indiana Birth Problems Registry law (IC 16-38-4-7; 410 IAC 21-3) was amended to allow additional data sources to be used to improve the quality of the data. Data from the Indiana Birth Defects and Problems Registry will be used to detect trends in birth defects and suggest areas for further study; to identify epidemiological factors associated with birth defects; to address community concerns about the environmental effects on birth outcomes; to evaluate education, screening, and prevention programs; and to establish efficient referral systems that provide special services for the children with identified birth defects and their families.

Indiana State Department of Health staff obtained a three-year CDC Cooperative Agreement, a four-year Health Resource Service Administration (HRSA) Genetics Implementation Grant, a HRSA State Systems Development Initiative (SSDI), and HRSA's Title V Block Grant to fund the development of the enhanced IBDPR both programmatically and technically.

Case Ascertainment

The Indiana Birth Defects and Problems Registry (IBDPR) is considered a "passive" system because initial case ascertainment is through the electronic submission of hospital discharge data (HDD), with defined ICD-9-CM codes that identify birth defects and problems. However, in the early stages of program development, it was determined that up to 25% of the HDD was invalid. Therefore, the program protocol includes completing chart audits (which is indicative of an "active" birth defects registry) on the 44 CDC-targeted conditions to ensure the data submitted to the CDC is as valid as possible and to ensure that appropriate information is sent to families of children reported with at least one birth defect.

Hospital Reporting:

All 113 reporting hospitals are now submitting their monthly discharge data using the Indiana Health Data Center Gateway web portal. By the end of July 2009, 78 hospitals had completed reporting up to June 2009, 3 hospitals had reported up to May 2009, 4 hospitals up to March 2009, 2 hospitals up to December 2008, and 9 hospitals up to September 2008. Hospitals are required to report birth defects data to the IBDPR when they finish coding hospital discharge records for each month. The changes in data collection and recording systems and lack of resources, such as

medical records or information technology staff, have been presented as reasons for the delays or irregularities in data reporting.

Physician Reporting:

The IBDPR uses physician reporting to identify children with birth defects that may not be diagnosed at birth and may, therefore, be diagnosed in a doctor's office rather than a hospital. The IBDPR staff considers a physician's submission to be confirmation of a diagnosis. No chart auditing is done on charts in a physician's office. If the IBDPR has received duplicate information from a hospital and no chart audit has been completed, the physician's report will be confirmation of that birth defect and no chart audit will be done at the hospital. IBDPR staff expects that reports of children with autism and fetal alcohol spectrum disorder will be ascertained primarily from physician reporting, as the diagnostic criteria for both conditions include developmental delays that are not detectable at birth.

In the fall of 2008, IBDPR introduced the online Physician Reporting System to all physicians and psychologists who manage children from birth to 5 years of age. This new, more efficient reporting system was developed to replace the Teleforms-based reporting system implemented in 2004. IBDPR's goal was to create awareness of the new reporting method and to encourage relevant physicians and psychologists to register in the web-based system to report to ISDH by the end of spring of 2009. As of October 5, 2009, 22 health care providers or office managers, representing 33 individual health care providers, have registered to use the online Physician Reporting System.

In the past, any announcements of legislative changes or reporting requirements were sent to appropriate health care providers by mailing information packets to them. Due to insufficient funding to reach approximately 6,000 health care providers in September 2008, IBDPR decided to publish an announcement of the new Physician Reporting System within the newsletters of the Indiana State Medical Association (ISMA), Indiana Academy of Family Physicians (IAFP), Indiana Academy of Pediatrics (IAP), and Indiana Psychology Association (IPA). This announcement contained a brief introduction of the IBDPR and registration instructions for the ISDH Gateway Web Application and IBDPR Physician Reporting System.

In recognition of "Birth Defects Awareness Month" and to promote the awareness of the new online Physician Reporting Method, an article was published in the ISMA, IAFP, IAP, IPA, and Indiana Psychiatric Society (IPS) newsletters in January 2009.

During this reporting period (July 2008 – June 2009), 272 children with birth defects were reported by 22 physicians and 18 children were reported by 4 psychologists. From January through June of 2009, 199 reports were received by the online Physician Reporting System. No physician reports have been received via the Teleforms system since May 2009.

Application Development

In the spring of 2009, the data transition from the Operational Data Store (ODS) to Integrated Data System (IDS) was completed. The IDS was developed to improve the data quality and integrity of the ODS. The IDS also provides data auditing capabilities and enhanced data management. As a result of this transition and subsequent system modifications, more accurate birth defects data is now available, compared to previous years. Some of the ODS-based applications are no longer available due to this transition. IDS developers are working to develop new applications to analyze birth defects data collected from statewide hospitals and health care providers.

The six-month web-based physician reporting pilot project, involving five physicians, was a success. Therefore, as stated earlier, IBDPR staff introduced the web-based Physician Reporting System (accessible via ISDH Gateway) to statewide physicians in the fall of 2008.

Program Development

The goals of the program are to improve the quality of the data available on birth defects in Indiana and to provide information related to understanding the birth defect(s) and available resources to families of children with confirmed birth defects, as well as their health care providers.

Each time a change occurs within the rules regarding case ascertainment, IBDPR staff has ensured that all appropriate personnel, including health care providers and birthing facility staff, have received notification of the legislative change.

Due to the data transition from the ODS to the IDS, IBDPR staff postponed implementing the mailing of educational information and resource packets to parents or guardians of children with at least one confirmed birth defect. When the electronic application to send these packets is implemented, IBDPR staff will begin sending packets to the families of children with at least one confirmed birth defect who were born in 2008 or later. The effectiveness of these mailings will be evaluated once the program is fully functioning.

National Meetings Attended

The Centers for Disease Control and Prevention (CDC) offered one IBDPR staff member complete funding to attend the 12th annual meeting of the National Birth Defects Prevention Network (NBDPN) in Nashville, Tennessee, in February 2009. This funding was not utilized, as the state travel committee was not approving out-of-state travel at that time. This conference was designed to enhance relationships between federal, state, and professional organizations that are working toward common goals and also to provide an opportunity to discuss successful efforts related to reducing and preventing birth defects.

Statute Requisites

As the IBDPR collects data daily on children from birth to three or five years of age, the same report for the same time period, compiled on different dates, may indicate different values. The data for this report was compiled on 08/07/2009. Due to the small numbers of birth defects per year, data will be grouped in multiple years, as is required by CDC for the national publication. This report includes Indiana data available during the following four years: 2003, 2004, 2005 and 2006. According to Vital Records data, there were 348,478 live births in Indiana from 2003 through 2006.

1) The numbers and types of birth problems occurring in Indiana by county:

The data presented in Tables 1-3 were obtained by the data files submitted to the IBDPR by statewide hospitals as required by the Birth Problems Registry law (IC 16-38-4-7; 410 IAC 21-3). The hospitals extract this data from their hospital discharge (UB-92) records.

To verify the accuracy of hospital discharge data, the IBDPR targets 46 specific birth defects from the list of reported conditions for chart auditing by ISDH staff/contractors. These 46 defects are recommended by the National Birth Defects Prevention Network and are published for most states annually in *Birth Defects Research Part A: Clinical and Molecular Teratology*. IBDPR chart auditors visit hospitals and review the medical records of children that have been reported to the

IBDPR with one or more targeted conditions in order to confirm the conditions or to determine them as probable (Table 5).

About 52% of the birth defects reported through hospital discharge data were determined to be confirmed conditions based on medical chart audits for 2003 - 2006 births. Of the targeted birth defects reported and confirmed, approximately 82% occurred in non-Hispanic white children, 10% in non-Hispanic black children, 7% in Hispanic children, 1% in Asian children, and < 1% each in children of American Indian descent or other races/ethnicities.

The following explains the attached tables:

Table 1 shows the number of children reported by the hospitals through ICD-9-CM codes at discharge for each reportable condition category. These are unduplicated children for each condition category. However, many children with birth defects or problems have more than one defect, so some children may be included in multiple condition categories. These numbers do not reflect confirmation of the defect, merely hospital reporting.

Table 2 shows the number of children reported with only one reportable condition and Table 3 shows the number of children reported with more than one reportable condition; the count is unduplicated by condition category. These tables are subsets of Table 1 and, again, do not reflect whether there is a confirmed diagnosis that supports the discharge code.

Tables 4A and 4B reflect the sources of case ascertainment for the targeted conditions and non-targeted reportable conditions. According to these tables, 13% of occurrences of autism, 31% of fetal alcohol syndrome (FAS), and 26% of autism spectrum and other pervasive developmental disorders were reported to the IBDPR only via physician reporting. Therefore, direct physician reports are imperative for accurate reporting of the prevalence of these conditions, as they are not commonly diagnosed at hospitals.

Table 5 reflects the targeted condition categories reported to the IBDPR by hospital discharge data for children born in 2003 – 2006, where the condition was determined to be confirmed or probable, based on information obtained during the chart audit. A "probable" condition is one that has been audited, where the criteria for confirmation was adequate enough to determine the condition to be likely, but not enough to confidently confirm the condition. The percentage of confirmed vs. reported conditions reflects the validity of the hospital discharge data reported by the hospitals. Approximately 52% of all targeted conditions reported for live births during the four-year period were determined to be probable or confirmed based on information obtained during chart audits. This is a drop of 3% from last year's value, which was the result from three years of available data.

Less than 50% of all reported autism and related pervasive developmental disorders, cardiovascular anomalies, and eye anomalies were confirmed. When more than 5 years' data is available for review, IBDPR staff will be able to identify the specific conditions that are accurately reported through hospital discharge data. The ICD-9-CM codes listed on hospital discharges often represent conditions that may possibly be present, but require additional testing or information to accurately confirm or rule out.

Table 6 provides the counts and rates (by race, per 10,000 births) of confirmed and probable targeted conditions for Indiana children born between 2003 and 2006 who have been reported to the IBDPR. Conditions determined to be "probable" are included with the confirmed conditions for counts and rates. The overall rate of 279 per 10,000 births is within national estimates.

Table 7 indicates trisomy counts and rates of infants born in 2003 – 2006 by maternal age. Children with trisomy conditions have three, rather than the expected two, copies of a chromosome—for example, children born with a third copy of chromosome 21 have Down syndrome, also called trisomy 21.

Table 8 shows the counts and rates per 10,000 births of confirmed and probable targeted birth defect conditions for Indiana children born between 2003 and 2006 for each county in Indiana. Any count that is less than five (5), either for the entire county or for a specific birth defect, is indicated as "less than reportable numbers" (symbolized by an asterisk, "*").

2) The amount of use of the birth problems registry by researchers:

Annual Indiana data of the 2003 – 2006 births (Table 6) was submitted to the National Birth Defects Prevention Network (NBDPN) in August 2009; this data will be published in *Birth Defects Research Part A: Clinical and Molecular Teratology* in December 2009. The IBDPR did not receive any other data requests from researches within this fiscal year. The data will be most useful for research and analysis when several years of data are available.

3) Proposals for the prevention of birth problems occurring in Indiana:

Currently, the IBDPR contains four years' worth of information on birth defect rates within the state. This amount of information is not enough to allow IBDPR staff to accurately evaluate the presence of trends and/or clusters and, therefore, the need for specific prevention campaigns. In April 2008, a full-time epidemiologist joined the ISDH Maternal and Child Health (MCH) staff; the MCH Epidemiologist will work with IBDPR staff to review new IBDPR data at the earliest opportunity.

Curricula related to education and prevention of fetal alcohol syndrome (FAS) and the benefits of folic acid were developed and distributed to middle school and high school consumer family sciences and biology teachers during this fiscal year. This information was presented at the annual Hoosier Association of Science Teachers, Inc. (HASTI) conference in February 2009; the ISDH intends to present this information again at the 2010 HASTI conference. IBDPR staff members are requesting and collecting feedback based on the teachers' use of this information, and intends to evaluate the effectiveness of the curricula at the earliest opportunity.

Table 1: Number of Children* Reported** to IBDPR by Birth Year

Table 1: Number of Children Rep		II Dy D	min real	1	
Condition Name / Category	ICD-9-CM Codes	2003	2004	2005	2006
Acute myelofibrosis	289.8				1
Adenoma of lung bronchus	212.3		1	1	1
Anomalies of jaw	524.00-254.10	52	61	57	65
Anterior horn cell disease	335.00-335.99	4	8	3	3
Autism, Childhood disintegrative disorder, Aspergers, Rett syndrome, and Pervasive developmental disorders not otherwise specified	299.00-299.99	295	234	171	79
Cardiovascular anomalies	745.00-747.99	1734	1948	2062	2120
Central nervous system anomalies	740.00-742.99	358	334	377	387
Cerebral degenerations usually manifest in childhood	330.00-330.99	11	7	5	4
Chromosomal anomalies	758.00-758.99	191	200	206	229
Cleft palate and cleft lip	749.00-749.99	143	174	153	162
Coagulation defects	286.00-286.50	33	30	29	28
Congenital anomalies of integument	757.00-757.99	350	701	1113	1605
Congenital nystagmus	379.51	6	3	10	7
Constitutional aplastic anemia	284	1	1	1	
Diabetes mellitus	250.00-250.99	175	167	160	169
Diseases of white blood cells	288.00-288.99	663	756	779	714
Disorders involving the immune mechanism	279.00-279.99	63	62	75	57
Dyshormonogenic goiter	246.1	2			
Ear, face and neck anomalies	744.00-744.99	198	207	206	220
Eye anomalies	743.00-743.99	240	213	223	215
Fetal alcohol syndrome	760.71	31	32	23	23
Gastrointestinal anomalies	750.30-751.99	354	454	455	519
Genitourinary anomalies	752.00-753.99	1252	1451	1474	1465
Hereditary hemolytic anemias	282.00-282.99	126	164	161	171
Hereditary retinal dystrophies	362.7			1	
Mesothelioma of peritoneum	211.8		1		
Muscular dystropies and myopathies	359.00-359.99	16	25	29	26
Musculoskeletal anomalies	754.00-756.99	1555	1732	1823	1781
Neoplasms of lip	140.00-208.99	114	118	126	115
Neoplasms of skin	216.00-216.99	136	133	146	135
Neoplasms-other	230.00-239.99	71	53	105	107
Other congenital anomalies	759.00-759.99	208	210	245	255
Other testicular dysfunction	257.8		1	1	1
Primary thrombocytopenia	287.3	33	30	8	2
Respiratory system anomalies	748.00-748.99	298	353	365	421
Retrolental fibroplasia	362.21	155	148	154	179
Strabismus and other disorders of binocular eye movement	378.00-378.99	113	107	114	76
Upper alimentary tract anomalies	750.00-750.29	363	389	373	424
Waldenstroms macroglobulinemia	273.3		1	1	1

^{*}Whose mothers were Indiana residents at the time of child's birth

^{**}Includes hospital discharge data and physician reports Data compiled on 08/14/2009.

Table 2: Number of Children* Reported ** to IBDPR with Only One Reportable Condition by Birth Year

Condition Name / Category	ICD-9-CM Codes	2003	2004	2005	2006
Anomalies of jaw	524.00-254.10	9	15	6	11
Anterior horn cell disease	335.00-335.99	1	2	3	
Autism, Childhood disintegrative disorder, Aspergers, Rett syndrome, and Pervasive developmental disorders not otherwise	000 00 000 00	100	4.45	440	4.
specified	299.00-299.99	183	145	118	45
Cardiovascular anomalies	745.00-747.99	692	797	895	88
Central nervous system anomalies	740.00-742.99	119	136	146	139
Cerebral degenerations usually manifest in childhood	330.00-330.99	1	1	4	
Chromosomal anomalies	758.00-758.99	35	30	43	4
Cleft palate and cleft lip	749.00-749.99	51	48	42	58
Coagulation defects	286.00-286.50	18	16	13	1(
Congenital anomalies of integument	757.00-757.99	274	579	960	131
Congenital nystagmus	379.51	3	1	6	;
Diabetes mellitus	250.00-250.99	117	104	109	11
Diseases of white blood cells	288.00-288.99	499	525	558	48
Disorders involving the immune mechanism	279.00-279.99	24	19	32	1
Dyshormonogenic goiter	246.1	2			
Ear, face and neck anomalies	744.00-744.99	115	114	109	10
Eye anomalies	743.00-743.99	172	157	142	13
Fetal alcohol syndrome	760.71	15	13	6	
Gastrointestinal anomalies	750.30-751.99	239	297	274	33
Genitourinary anomalies	752.00-753.99	876	979	983	96
Hereditary hemolytic anemias	282.00-282.99	93	104	108	11
Mesothelioma of peritoneum	211.8		1		
Muscular dystropies and myopathies	359.00-359.99	7	9	5	
Musculoskeletal anomalies	754.00-756.99	1035	1119	1179	111
Neoplasms of lip	140.00-208.99	36	36	32	4
Neoplasms of skin	216.00-216.99	104	104	110	9
Neoplasms-other	230.00-239.99	32	26	46	4
Other congenital anomalies	759.00-759.99	57	47	69	7
Other testicular dysfunction	257.8		1		
Primary thrombocytopenia	287.3	14	11	4	
Respiratory system anomalies	748.00-748.99	122	139	133	18
Retrolental fibroplasia	362.21	45	52	46	6
Strabismus and other disorders of binocular					
eye movement	378.00-378.99	57	56	50	3
Upper alimentary tract anomalies	750.00-750.29	288	304	280	35
Waldenstroms macroglobulinemia	273.3		1	1	

^{**}Includes hospital discharge data and physician reports Data compiled on 08/14/2009.

Table 3: Number of Children* Reported** to IBDPR with More Than One Reportable Condition by Birth Year

Condition Name / Category	ICD-9-CM Codes	2003	2004	2005	2006
Acute myelofibrosis	289.8				1
Adenoma of lung bronchus	212.3		1	1	1
Anomalies of jaw	524.00-254.10	43	46	51	54
Anterior horn cell disease	335.00-335.99	3	6	- 0.	2
Autism, Childhood disintegrative disorder,	000.00 000.00				
Aspergers, Rett syndrome, and Pervasive					
developmental disorders not otherwise					
specified	299.00-299.99	112	89	53	34
Cardiovascular anomalies	745.00-747.99	1042	1151	1167	1237
Central nervous system anomalies	740.00-742.99	239	198	231	248
Cerebral degenerations usually manifest					
in childhood	330.00-330.99	10	6	1	4
Chromosomal anomalies	758.00-758.99	156	170	163	188
Cleft palate and cleft lip	749.00-749.99	92	126	111	104
Coagulation defects	286.00-286.50	15	14	16	18
Congenital anomalies of integument	757.00-757.99	76	122	153	289
Congenital nystagmus	379.51	3	2	4	4
Constitutional aplastic anemia	284	1	1	1	
Diabetes mellitus	250.00-250.99	58	63	51	52
Diseases of white blood cells	288.00-288.99	164	231	221	233
Disorders involving the immune					
mechanism	279.00-279.99	39	43	43	39
Ear, face and neck anomalies	744.00-744.99	83	93	97	116
Eye anomalies	743.00-743.99	68	56	81	77
Fetal alcohol syndrome	760.71	16	19	17	15
Gastrointestinal anomalies	750.30-751.99	115	157	181	189
Genitourinary anomalies	752.00-753.99	376	472	491	501
Hereditary hemolytic anemias	282.00-282.99	33	60	53	56
Hereditary retinal dystrophies	362.7			1	
Muscular dystropies and myopathies	359.00-359.99	9	16	24	21
Musculoskeletal anomalies	754.00-756.99	520	613	644	666
Neoplasms of lip	140.00-208.99	78	82	94	68
Neoplasms of skin	216.00-216.99	32	29	36	37
Neoplasms-other	230.00-239.99	39	27	59	63
Other congenital anomalies	759.00-759.99	151	163	176	184
Other testicular dysfunction	257.8			1	
Primary thrombocytopenia	287.3	19	19	4	2
Respiratory system anomalies	748.00-748.99	176	214	232	236
Retrolental fibroplasia	362.21	110	96	108	111
Strabismus and other disorders of				T	
binocular eye movement	378.00-378.99	56	51	64	40
Upper alimentary tract anomalies	750.00-750.29	75	85	93	74

^{*}Whose mothers were Indiana residents at the time of child's birth

^{**}Includes hospital discharge data and physician reports Data compiled on 08/14/2009.

Table 4A: Sources of Case Ascertainment Data for Targeted Conditions of 2003 - 2006 Births to Indiana Women

	1			
	Reported	Reported	Reported	
Condition Norse / Ostaraw	by	by	by	Total
Condition Name / Category	Physician	Hospital	Physician	Total
	Only	Only	and	
Anonoonholuo	0	31	Hospital 0	31
Anencephalus Aniridia	0	6	0	6
	1	0	0	1
Anomalies of the ear causing impairment of hearing Anophthalmia/microphthalmia	3	55	0	58
Anotia/microtia	3	21	1	25
Anotia/microtia Aortic valve stenosis	0	106	0	106
	5	3835	5	3845
Atrial septal defect Atrioventricular septal defect	2	235	1	238
	74	469	49	
Autism Biliary etropia				592
Biliary atresia	0	38	1 0	39
Bladder exstrophy	0	7		7
Choanal atresia	0	71	0	71
Cleft lip with and without cleft palate	16	553	8	577
Cleft palate without cleft lip	4	417	14	435
Coarctation of aorta	4	314	2	320
Common truncus	0	22	0	22
Congenital cataract	2	39	1	42
Congenital hip dislocation	0	515	0	515
Diaphragmatic hernia	3	117	0	120
Down syndrome	6	465	45	516
Ebstein anomaly	0	32	0	32
Encephalocele	1	37	0	38
Epispadius	0	25	0	25
Esophageal atresia/tracheoesophageal fistula	1	86	1	88
Fetus or newborn affected by maternal alcohol use	34	61	14	109
Gastroschisis	0	138	0	138
Hirschsprung's disease (congenital megacolon)	1	106	1	108
Hydrocephalus without Spina Bifida	4	268	4	276
Hypoplastic left heart syndrome	0	102	0	102
Hypospadias	5	1365	8	1378
Microcephalus	33	494	21	548
Obstructive genitourinary defect	0	105	0	1076
Omphalocele	0	30	0	30
Patent ductus arteriosus	5	2872	2	2879
Pulmonary valve atresia and stenosis	6	555	2	563
Pyloric stenosis	0	972	0	972
Rectal and large intestinal atresia/stenosis	0	140	6	146
Reduction deformity, lower limbs	3	75	3	81
Reduction deformity, upper limbs	10	105	2	117
Renal agenesis/hypoplasia	1	122	3	126
Spina bifida without anencephalus	9	310	8	327
Tetralogy of fallot	2	157	2	161
Transposition of great arteries	0	242	1	243
Tricuspid valve atresia and stenosis	0	45	0	45
Trisomy 13 (Patau syndrome)	2	39	2	43
Trisomy 18 (Edwards syndrome)	1	45	4	50
Ventricular septal defect	8	1742	5	1755

Data compiled on 08/14/2009.

Table 4B: Sources of Case Ascertainment Data for Reportable Conditions* of 2003 - 2006 Births to Indiana Women

Condition Name / Category	Reported by Physician Only	Reported by Hospital Only	Reported by Physician and	Total
			Hospital	
Acute myelofibrosis	1	0	0	1
Adenoma of lung bronchus	0	3	0	3
Anomalies of jaw	6	264	2	272
Anterior horn cell disease	0	19	0	19
Autism, Childhood disintegrative disorder, Aspergers,				
Rett syndrome, and Pervasive developmental	74	404	0	074
disorders not otherwise specified	71	194	9	274
Cardiovascular anomalies	25	4146	8	4179
Central nervous system anomalies	13	673	5	691
Cerebral degenerations usually manifest in childhood	1	26	1	28
Chromosomal anomalies	52	353	15	420
Coagulation defects	0	153	1	154
Congenital anomalies of integument	8	3884	5	3897
Congenital nystagmus	0	26	0	26
Constitutional aplastic anemia	0	3	0	3
Diabetes mellitus	1	814	0	815
Diseases of white blood cells	0	3080	0	3080
Disorders involving the immune mechanism	0	306	1	307
Dyshormonogenic goiter	0	2	0	2
Ear, face and neck anomalies	6	889	1	896
Eye anomalies	10	827	1	838
Gastrointestinal anomalies	2	591	1	594
Genitourinary anomalies	13	4040	4	4057
Hereditary hemolytic anemias	1	741	0	742
Hereditary retinal dystrophies	0	1	0	1
Mesothelioma of peritoneum	0	1	0	1
Muscular dystropies and myopathies	5	115	0	120
Musculoskeletal anomalies	87	7219	51	7357
Neoplasms of lip	3	922	1	926
Neoplasms of skin	1	585	0	586
Neoplasms-other	4	366	2	372
Other congenital anomalies	55	929	25	1009
Other testicular dysfunction	0	3	0	3
Primary thrombocytopenia	0	73	0	73
Respiratory system anomalies	9	1437	4	1450
Retrolental fibroplasia	0	636	0	636
Strabismus and other disorders of binocular eye				
movement	7	453	0	460
Upper alimentary tract anomalies	9	1549	0	1558
Waldenstroms macroglobulinemia	0	3	0	3

^{*}Excludes targeted conditions Data compiled on 08/14/2009.

Table 5: Targeted Conditions Reported to IBDPR via Hospital Discharge Data for Children Born in 2003 - 2006 which are Confirmed or Determined as Probable by Medical Chart Audits or Physician Reports

Condition Name / Category	Codes	Number of Children Reported	Targeted Conditions Reported	Conditions per Child	Conditions Confirmed / Probable	Confirmed / Probable Percentage
Autism, Childhood disintegrative disorder, Aspergers, Rett syndrome, and Pervasive developmental disorders not otherwise specified						
	299.00-299.99	514	518	1	244	47.10%
Cardiovascular anomalies	745.00-747.99	6579	10279	2	4335	42.17%
Central nervous system						
anomalies	740.00-742.99	977	1173	1	630	53.71%
Chromosomal anomalies	758.00-758.99	543	600	1	431	71.83%
Cleft palate and cleft lip	749.00-749.99	629	992	2	569	57.36%
Ear, face and neck						
anomalies	744.00-744.99	22	22	1	14	63.64%
Eye anomalies	743.00-743.99	95	101	1	49	48.51%
Fetal alcohol syndrome	760.71	75	75	1	59	78.67%
Gastrointestinal anomalies	750.30-751.99	1321	1351	1	1037	76.76%
Genitourinary anomalies	752.00-753.99	2545	2606	1	1771	67.96%
Musculoskeletal anomalies	754.00-756.99	895	985	1	531	53.91%
Respiratory system						
anomalies	748.00-748.99	71	71	1	41	57.75%

Data compiled on 08/14/2009.

Table 6: Confirmed and Probable Counts and Rates by Race of the Targeted Conditions for 2003 - 2006 Births to Indiana Women (Rates per 10,000 live births displayed in shaded area.)

	Non- Hispanic	Non- Hispanic		Asian or Pacific	American Indian or Alaskan	Other /	
Defect	White	Black	Hispanic	Islander	Native	Unknown	Total
Anencephalus	9	1	2	0	0	1	13
	0.34	0.22	0.66	0	0	5.71	0.37
Aniridia	4	1	0	0	0	0	5
	0.15	0.22	0	0	0	0	0.14
Anophthalmia/microphthalmia	18	3	2	0	0	0	23
	0.68	0.66	0.66	0	0	0	0.66
Anotia/microtia	12	0	4	1	0	0	17
	0.45	0	1.31	1.90	0	0	0.49
Aortic valve stenosis	55	2	1	0	0	1	59
	2.08	0.44	0.33	0	0	5.71	1.69
Atrial septal defect	1006	135	70	17	1	6	1235
	38.01	29.73	22.93	32.28	12.02	34.27	35.44
Atrioventricular septal defect	122	12	9	1	1	1	146
	4.61	2.64	2.95	1.90	12.02	5.71	4.19
Autism	254	16	16	1	1	0	288
	9.60	3.52	5.24	1.90	12.02	0	8.26
Biliary atresia	21	6	5	0	0	0	32
	0.79	1.32	1.64	0	0	0	0.92
Bladder exstrophy	3	0	0	2	0	0	5
	0.11	0	0	3.80	0	0	0.14
Choanal atresia	32	5	4	0	0	0	41
	1.21	1.10	1.31	0	0	0	1.18
Cleft lip with and without cleft palate	255	15	34	9	0	2	315
	9.63	3.30	11.14	17.09	0	11.42	9.04
Cleft palate without cleft lip	191	20	12	1	0	0	224
	7.22	4.40	3.93	1.90	0	0	6.43
Coarctation of aorta	189	17	16	1	0	2	225
	7.14	3.74	5.24	1.90	0	11.42	6.46
Common truncus	13	2	1	1	0	0	17
	0.49	0.44	0.33	1.90	0	0	0.49
Congenital cataract	19	3	3	0	0	1	26
	0.72	0.66	0.98	0	0	5.71	0.75
Congenital hip dislocation	166	8	25	1	0	1	201
B: 1	6.27	1.76	8.19	1.90	0	5.71	5.77
Diaphragmatic hernia	78	6	5	1	0	0	90
Down aundram	2.95 306	1.32	1.64 27	1.90 6	0	2	2.58
Down syndrome		7.05	8.85	11.39	0	11.42	373
Ebstein anomaly	11.56 20	7.05	3	0	0	11.42	10.70 25
Ebstein anomaly	0.76	0.44	0.98	0	0	0	0.72
Encophalocolo	13	2	0.98	0	0	0	19
Encephalocele	0.49	0.44	1.31	0	0	0	0.55
	0.48	0.44	1.01	U	U	U	0.00

Note 1—Rates based on fewer than 20 cases are unstable and are not comparable. Note 2—Race is assigned to the child based on the mother's reporting about herself. Data compiled on 08/14/2009.

Table 6: Confirmed and Probable Counts and Rates by Race of the Targeted Conditions for 2003 - 2006 Births to Indiana Women (Rates per 10,000 live births displayed in shaded area.)

	Non-	Non-		Asian or Pacific	American Indian or Alaskan	Other /	
Defect	Hispanic White	Hispanic Black	Hispanic	lslander	Native	Unknown	Total
Epispadius	10	1	0	0	0	0	11
• •	0.38	0.22	0	0	0	0	0.32
Esophageal atresia/tracheoesophageal fistula	53	9	4	1	0	0	67
	2	1.98	1.31	1.90	0	0	1.92
Fetus or newborn affected by maternal alcohol use	73	18	2	0	0	0	93
	2.76	3.96	0.66	0	0	0	2.67
Gastroschisis	82	4	11	0	0	0	97
	3.10	0.88	3.60	0	0	0	2.78
Hirschsprung's disease (congenital megacolon)	59	9	1	1	0	0	70
	2.23	1.98	0.33	1.90	0	0	2.01
Hydrocephalus without Spina Bifida	141	31	12	2	0	0	186
	5.33	6.83	3.93	3.80	0	0	5.34
Hypoplastic left heart syndrome	56	6	3	1	0	1	67
	2.12	1.32	0.98	1.90	0	5.71	1.92
Hypospadias	836	106	27	6	0	3	978
	31.58	23.34	8.85	11.39	0	17.13	28.06
Microcephalus	204	38	25	5	0	1	273
	7.71	8.37	8.19	9.49	0	5.71	7.83
Obstructive genitourinary defect	588	55	42	10	2	3	700
	22.21	12.11	13.76	18.99	24.04	17.13	20.09
Omphalocele	21	5	4	0	0	0	30
	0.79	1.10	1.31	0	0	0	0.86
Patent ductus arteriosus	501	95	42	6	1	6	651
	18.93	20.92	13.76	11.39	12.02	34.27	18.68
Pulmonary valve atresia and stenosis	256	39	20	6	1	1	323
	9.67	8.59	6.55	11.39	12.02	5.71	9.27
Pyloric stenosis	647	36	66	0	3	4	756
	24.44	7.93	21.62	0	36.06	22.84	21.69
Rectal and large intestinal atresia/stenosis	98	10	2	3	0	0	113
	3.70	2.20	0.66	5.70	0	0	3.24
Reduction deformity, lower limbs	27	8	2	0	0	0	37
	1.02	1.76	0.66	0	0	0	1.06

Note 1—Rates based on fewer than 20 cases are unstable and are not comparable. Note 2—Race is assigned to the child based on the mother's reporting about herself. Data compiled on 08/14/2009.

Table 6: Confirmed and Probable Counts and Rates by Race of the Targeted Conditions for 2003 - 2006 Births to Indiana Women (Rates per 10,000 live births displayed in shaded area.)

Defect	Non- Hispanic White	Non- Hispanic Black	Hispanic	Asian or Pacific Islander	American Indian or Alaskan Native	Other / Unknown	Total
Reduction deformity, upper limbs	71	8	7	1	0	0	87
	2.68	1.76	2.29	1.90	0	0	2.50
Renal agenesis/hypoplasia	69	5	6	1	1	0	82
	2.61	1.10	1.97	1.90	12.02	0	2.35
Spina bifida without anencephalus	106	12	21	2	0	0	141
	4	2.64	6.88	3.80	0	0	4.05
Tetralogy of fallot	88	19	8	1	0	0	116
	3.32	4.18	2.62	1.90	0	0	3.33
Transposition of great arteries	134	13	14	2	0	1	164
	5.06	2.86	4.59	3.80	0	5.71	4.71
Tricuspid valve atresia and stenosis	28	3	1	0	0	0	32
	1.06	0.66	0.33	0	0	0	0.92
Trisomy 13 (Patau syndrome)	17	3	5	1	0	0	26
	0.64	0.66	1.64	1.90	0	0	0.75
Trisomy 18 (Edwards syndrome)	20	7	2	1	2	0	32
	0.76	1.54	0.66	1.90	24.04	0	0.92
Ventricular septal defect	988	106	101	24	3	2	1224
	37.33	23.34	33.09	45.58	36.06	11.42	35.12
All Defects							
/ III Dolooto	7959	934	671	116	16	39	9735

Note 1—Rates based on fewer than 20 cases are unstable and are not comparable. Note 2—Race is assigned to the child based on the mother's reporting about herself. Data compiled on 08/14/2009.

Table 7: Confirmed and Probable Counts and Rates of Trisomy by Maternal Age for 2003 - 2006 Births to Indiana Women (Rates per 10,000 live births displayed in the shaded area.)

Defect Down syndrome	<35 218	>= 35 155	total 373
	6.98	42.95	10.70
Trisomy 13 (Patau syndrome)	16	10	26
	0.51	2.77	0.75
Trisomy 18 (Edwards syndrome)	16	16	32
	0.51	4.43	0.92
	312391	36087	348478

Note—Rates based on fewer than 20 cases are unstable and are not comparable. Data compiled on 08/14/2009.

Table 8: Indiana Confirmed and Probable Counts and Rates of the Targeted Conditions for 2003 - 2006
Births to Indiana Women by County (rates per 10,000 births)

County Live Births			County Live Births		
Defect	Total	Rate	Defect	Total	Rate
ADAMS 2531			ALLEN 21280		
Atrial septal defect	14	55.31	Aniridia	*	
Biliary atresia	*		Anophthalmia/microphthalmia	*	
Cleft lip with and without cleft	*		Anotia/microtia	*	
palate			Aortic valve stenosis	8	3.76
Cleft palate without cleft lip	*		Atrial septal defect	251	117.9
Coarctation of aorta	*		Atrioventricular septal defect	10	4.7
Common truncus	*		Autism	37	17.3
Congenital hip dislocation	*		Biliary atresia	*	
Diaphragmatic hernia	*		Choanal atresia	*	
Down syndrome	*		Cleft lip with and without cleft palate	28	13.10
Hirschsprung's disease (congenital	*		Cleft palate without cleft lip	25	11.7
megacolon)			Coarctation of aorta	17	7.99
Hydrocephalus without Spina Bifida	*		Congenital cataract	*	
Hypospadias	8	31.61	Congenital hip dislocation	7	3.2
Microcephalus	*		Diaphragmatic hernia	*	
Patent ductus arteriosus	*		Down syndrome	19	8.9
Pyloric stenosis	*		Ebstein anomaly	5	2.3
Spina bifida without anencephalus	*		Encephalocele	*	
Tetralogy of fallot	*		Esophageal	*	
Transposition of great arteries	*		atresia/tracheoesophageal fistula		
Tricuspid valve atresia and	*		Fetus or newborn affected by	22	10.3
stenosis			maternal alcohol use		
Trisomy 13 (Patau syndrome)	*		Hirschsprung's disease (congenital	*	
Trisomy 18 (Edwards syndrome)	*		megacolon)		
Ventricular septal defect	12	47.41		20	9.4
All defects	72		Hydrocephalus without Spina		
BLACKFORD 601			Bifida		
Aortic valve stenosis	*		Hypoplastic left heart syndrome	*	
Atrial septal defect	*		Hypospadias	73	34.3
Autism	*		Microcephalus	48	22.5
Cleft lip with and without cleft palate	*		Obstructive genitourinary defect	24	11.2
Congenital hip dislocation	*		Patent ductus arteriosus	80	37.5
Microcephalus	*		Pulmonary valve atresia and stenosis	52	24.4
Pyloric stenosis	*		Pyloric stenosis	50	23.5
Renal agenesis/hypoplasia	*		Rectal and large intestinal	9	4.2
Ventricular septal defect	7	116.47	atresia/stenosis		
All defects BENTON 476	23			*	
	*		Reduction deformity, lower limbs	6	0.0
Atrial septal defect	*		Reduction deformity, upper limbs Renal agenesis/hypoplasia	6 *	2.8
Autism	*		2	4.4	E 4
Cleft lip with and without cleft palate	*		Spina bifida without anencephalus	11	5.1
Hypospadias	*		Tetralogy of fallot	8	3.7
Obstructive genitourinary defect	*		Transposition of great arteries	11	5.1
Pyloric stenosis			Tricuspid valve atresia and stenosis		
Renal agenesis/hypoplasia			Trisomy 13 (Patau syndrome)		
Spina bifida without anencephalus	*		Trisomy 18 (Edwards syndrome)	*	
Ventricular septal defect	*		Ventricular septal defect	129	60.6

BOONE 2710			BARTHOLOMEW 4223		
Aniridia	*		Atrial septal defect	10	23.68
Atrial septal defect	13	47.97	Atrioventricular septal defect	*	
Atrioventricular septal defect	*		Choanal atresia	*	
Autism	*		Cleft lip with and without cleft	*	
Cleft lip with and without cleft palate	*		palate		
Cleft palate without cleft lip	*		Cleft palate without cleft lip	*	
Coarctation of aorta	5	18.45	Coarctation of aorta	6	14.21
Congenital hip dislocation	*		Common truncus	*	
Hypoplastic left heart syndrome	*		Congenital hip dislocation	*	
Hypospadias	8	29.52	Down syndrome	6	14.21
Microcephalus	*		Hydrocephalus without Spina	*	
Obstructive genitourinary defect	11	40.59	Bifida		
Patent ductus arteriosus	*	10.00	Hypoplastic left heart syndrome	*	
Pulmonary valve atresia and	*		Hypospadias	*	
stenosis			Microcephalus	5	11.84
Pyloric stenosis	7	25.83	Obstructive genitourinary defect	9	21.31
•	*	25.05	Patent ductus arteriosus	5	11.84
Rectal and large intestinal				*	11.04
atresia/stenosis Reduction deformity, upper limbs	*		Pulmonary valve atresia and		
	*		stenosis Pyloric stenosis	7	16.58
Renal agenesis/hypoplasia	*			<i>/</i>	16.56
Tetralogy of fallot	*		Transposition of great arteries	*	
Transposition of great arteries	*		Tricuspid valve atresia and	•	
Tricuspid valve atresia and			stenosis	*	
stenosis	4.0	44.00	Trisomy 18 (Edwards syndrome)		00 70
Ventricular septal defect All defects	12 80	44.28	Ventricular septal defect All defects	13 84	30.78
BROWN 457	- 00		CARROLL 908	- 04	
Atrial septal defect	*		Atrial septal defect	*	
Obstructive genitourinary defect	*		Atrioventricular septal defect	*	
Pulmonary valve atresia and	*		Biliary atresia	*	
stenosis			Cleft lip with and without cleft palate	*	
Spina bifida without anencephalus	*		Cleft palate without cleft lip	*	
All defects	6		,		
CLINTON 2033			Down syndrome	*	
Atrial septal defect	7	34.43	Esophageal	*	
Cleft lip with and without cleft palate	*		atresia/tracheoesophageal fistula		
Cleft palate without cleft lip	*		Hirschsprung's disease (congenital	*	
Common truncus	*		megacolon)		
Congenital hip dislocation	*		Hydrocephalus without Spina Bifida	*	
Diaphragmatic hernia	*		Hypospadias	*	
Down syndrome	*		Obstructive genitourinary defect	*	
Esophageal	*		Patent ductus arteriosus	*	
atresia/tracheoesophageal fistula			Pulmonary valve atresia and stenosis	*	
Hypospadias	*		Pyloric stenosis	*	
Microcephalus	*		Rectal and large intestinal	*	
Obstructive genitourinary defect	*		atresia/stenosis		
Patent ductus arteriosus	*		Spina bifida without anencephalus	*	
Pulmonary valve atresia and stenosis	*		Tetralogy of fallot	*	
Pyloric stenosis	6	29.51	Transposition of great arteries	*	
Transposition of great arteries	*	_3.0.	Ventricular septal defect	*	
Tanapatina a gradi ditana			All defects	33	
Ventricular septal defect	8	39.35			

CASS 2256			CLAY 1385		
Atrial septal defect	10	44.33	Atrial septal defect	*	
Atrioventricular septal defect	*		Autism	*	
Autism	*		Biliary atresia	*	
Cleft lip with and without cleft	*		Cleft lip with and without cleft	*	
palate			palate		
Coarctation of aorta	*		Cleft palate without cleft lip	*	
Congenital cataract	*		Coarctation of aorta	*	
Congenital hip dislocation	*		Congenital cataract	*	
Diaphragmatic hernia	*		Down syndrome	*	
Down syndrome	6	26.60	Hydrocephalus without Spina	*	
Ebstein anomaly	*		Bifida		
Esophageal	*		Hypospadias	6	43.32
atresia/tracheoesophageal fistula			Microcephalus	*	
Fetus or newborn affected by	*		Obstructive genitourinary defect	*	
maternal alcohol use			Patent ductus arteriosus	*	
Hirschsprung's disease (congenital	*		Pyloric stenosis	7	50.54
megacolon)			Rectal and large intestinal	*	
Hypoplastic left heart syndrome	*		atresia/stenosis		
Hypospadias	6	26.60	Spina bifida without anencephalus	*	
Microcephalus	*		Transposition of great arteries	*	
Obstructive genitourinary defect	*		Trisomy 13 (Patau syndrome)	*	
Patent ductus arteriosus	*		Ventricular septal defect	*	
			All defects	50	
Pulmonary valve atresia and	*		CLARK 5508		
stenosis	_		Atrial septal defect	9	16.34
Pyloric stenosis	9	39.89	Autism		
Rectal and large intestinal	^		Cleft lip with and without cleft	^	
atresia/stenosis			palate		
Reduction deformity, lower limbs	*		Cleft palate without cleft lip	*	
Spina bifida without anencephalus	*		Coarctation of aorta	*	
Tetralogy of fallot	*		Congenital hip dislocation	*	
Transposition of great arteries	0	05.40	Diaphragmatic hernia	0	10.00
Ventricular septal defect All defects	8 80	35.46	Down syndrome	6	10.89
DECATUR 1464			Fetus or newborn affected by	*	
Atrial septal defect	5	34.15	maternal alcohol use		
Atrioventricular septal defect	*		Gastroschisis	*	
Congenital hip dislocation	*		Hypospadias	10	18.16
Diaphragmatic hernia	*		Obstructive genitourinary defect	*	
Down syndrome	*		Patent ductus arteriosus	*	
Hypospadias	*		Pulmonary valve atresia and	7	12.71
Microcephalus	*		stenosis		
Obstructive genitourinary defect	*		Rectal and large intestinal	*	
Patent ductus arteriosus	*		atresia/stenosis		
Pulmonary valve atresia and	*		Spina bifida without anencephalus	*	
stenosis			Tetralogy of fallot	*	
Pyloric stenosis	8	54.64	Ventricular septal defect	37	67.18
			All defects	94	
Rectal and large intestinal	*		CRAWFORD 513	*	
atresia/stenosis				*	
Renal agenesis/hypoplasia	*				
Ventricular septal defect All defects	* 32				
All delecto	J <u>Z</u>				

DAVIESS 2023			DELAWARE 5177		
Atrial septal defect	*		Anophthalmia/microphthalmia	*	
Atrioventricular septal defect	*		Atrial septal defect	44	84.99
Choanal atresia	*		Autism	10	19.32
Cleft lip with and without cleft palate	*		Cleft lip with and without cleft palate	5	9.66
Cleft palate without cleft lip	*		Cleft palate without cleft lip	7	13.52
Congenital cataract	*		Coarctation of aorta	*	
Congenital hip dislocation	*		Common truncus	*	
Diaphragmatic hernia	*		Congenital hip dislocation	6	11.59
Down syndrome	*		Down syndrome	5	9.66
Encephalocele	*		Ebstein anomaly	*	
Esophageal	*		Encephalocele	*	
atresia/tracheoesophageal fistula			Fetus or newborn affected by	*	
Hypospadias	5	24.72	maternal alcohol use		
Microcephalus	*		Hirschsprung's disease (congenital	*	
Obstructive genitourinary defect	*		megacolon)		
Patent ductus arteriosus	*		Hydrocephalus without Spina	5	9.66
Pulmonary valve atresia and stenosis	*		Bifida	J	0.00
Pyloric stenosis	*		Hypospadias	23	44.43
Rectal and large intestinal	*		Microcephalus	9	17.38
atresia/stenosis			Obstructive genitourinary defect	33	63.74
Reduction deformity, upper limbs	*		Patent ductus arteriosus	17	32.84
Tricuspid valve atresia and stenosis	*		Pulmonary valve atresia and stenosis	5	9.66
Ventricular septal defect	*		Pyloric stenosis	15	28.97
All defects	37		T yione dianosis	.0	20.07
DEKALB 2243			Rectal and large intestinal	*	
Atrial septal defect	19	84.71	atresia/stenosis		
Autism	*		Renal agenesis/hypoplasia	*	
Cleft lip with and without cleft palate	*		Spina bifida without anencephalus	*	
Cleft palate without cleft lip	*		Tetralogy of fallot	*	
Coarctation of aorta	*		Transposition of great arteries	*	
Congenital hip dislocation	*		Trisomy 18 (Edwards syndrome)	*	
Diaphragmatic hernia	*		Ventricular septal defect	44	84.99
Down syndrome	*		All defects DUBOIS 2183	249	
-	*		Atrial septal defect	*	
Fetus or newborn affected by				*	
maternal alcohol use	*		Cleft lip with and without cleft palate Coarctation of aorta	*	
Hydrocephalus without Spina Bifida Hypospadias	7	31.21	Congenital cataract	*	
Microcephalus	5	22.29	Diaphragmatic hernia	*	
Obstructive genitourinary defect	*	22.23	Down syndrome	*	
Patent ductus arteriosus	*		•	*	
	5	22.29	Hirschsprung's disease (congenital		
Pulmonary valve atresia and stenosis Pyloric stenosis	6	26.75	megacolon) Hypospadias	5	22.90
-	*	20.73	Microcephalus	*	22.90
Rectal and large intestinal			Obstructive genitourinary defect	0	41.00
atresia/stenosis Renal agenesis/hypoplasia	*		Patent ductus arteriosus	9 *	41.23
Spina bifida without anencephalus	*		Pyloric stenosis	7	32.07
	*			<i>/</i>	32.07
Tetralogy of fallot			Rectal and large intestinal atresia/stenosis		
Transposition of great arteries	*		Reduction deformity, upper limbs	*	
Trisomy 18 (Edwards syndrome)	*		Transposition of great arteries	*	
Ventricular septal defect	*		Ventricular septal defect	*	
All defects	88		All defects	47	

ELKHART 13	3452		DEARBORN 2271		
Anencephalus	*		Cleft lip with and without cleft	*	
Anophthalmia/microphthalmia	*		palate		
Anotia/microtia	*		Congenital hip dislocation	*	
Aortic valve stenosis	*		Down syndrome	*	
Atrial septal defect	66	49.06	Esophageal	*	
Atrioventricular septal defect	6	4.46	atresia/tracheoesophageal fistula		
Autism	14	10.41	Obstructive genitourinary defect	*	
Choanal atresia	*		Reduction deformity, upper limbs All defects	* 9	
Cleft lip with and without cleft	11	8.18	FAYETTE 1188		
palate			Atrial septal defect	*	
Cleft palate without cleft lip	9	6.69	Autism	*	
Coarctation of aorta	6	4.46	Cleft lip with and without cleft	*	
Common truncus	*		palate		
Congenital cataract	*		Cleft palate without cleft lip	*	
Congenital hip dislocation	17	12.64	Down syndrome	*	
Diaphragmatic hernia	9	6.69	Hirschsprung's disease (congenital	*	
Down syndrome	14	10.41	megacolon)		
Esophageal	*		Hypospadias	*	
atresia/tracheoesophageal fist	ula		Microcephalus	*	
Fetus or newborn affected by	6	4.46	Pulmonary valve atresia and	*	
maternal alcohol use			stenosis		
Gastroschisis	*		Pyloric stenosis	*	
Hirschsprung's disease (conge	enital 5	3.72	Transposition of great arteries	*	
megacolon)			Ventricular septal defect	*	
•			All defects	19	
Hydrocephalus without Spina	8	5.95	FLOYD 3440	_	
Bifida	*		Atrial septal defect	7	20.35
Hypoplastic left heart syndrom		4407	Autism	5	14.53
Hypospadias	20	14.87	Cleft lip with and without cleft	•	
Microcephalus	17	12.64	palate	*	
Obstructive genitourinary defe		11.89	Cleft palate without cleft lip	•	
Patent ductus arteriosus	37	27.51	Community the transfer of the section	*	
Pulmonary valve atresia and	18	13.38	Congenital hip dislocation	· •	
stenosis	07	07.54	Diaphragmatic hernia		
Pyloric stenosis	37	27.51	Down syndrome	^	00.00
Rectal and large intestinal			Hypospadias	8	23.26
atresia/stenosis	*		Obstructive genitourinary defect Patent ductus arteriosus	*	
Reduction deformity, lower lim		0.70		*	
Reduction deformity, upper lim	nbs 5	3.72	Pulmonary valve atresia and		
Renal agenesis/hypoplasia	oluo *		stenosis	*	
Spina bifida without anenceph		6.60	Pyloric stenosis	*	
Tetralogy of fallot	9	6.69	Reduction deformity, lower limbs	*	
Transposition of great arteries	5 *	3.72	Tetralogy of fallot Ventricular septal defect	13	37.79
Tricuspid valve atresia and			All defects	53	37.79
stenosis	*		FRANKLIN 1019	*	
Trisomy 13 (Patau syndrome)			Atrial septal defect	*	
Trisomy 18 (Edwards syndrom	•	20.55	Cleft lip with and without cleft Palate	*	
Ventricular septal defect All defects	52 418	38.66	Hypospadias	•	
			Obstructive genitourinary defect	*	
			Pulmonary valve atresia and stenosis	*	
			All defects	7	

FOUNTAIN 822			FULTON 1021		
Atrial septal defect	5	60.83	Atrial septal defect	*	
Choanal atresia	*		Atrioventricular septal defect	*	
Cleft lip with and without cleft	*		Cleft lip with and without cleft palate	*	
palate			Diaphragmatic hernia	*	
Cleft palate without cleft lip	*		Down syndrome	*	
Congenital hip dislocation	*		Esophageal	*	
Down syndrome	*		atresia/tracheoesophageal fistula		
Fetus or newborn affected by	*		Hydrocephalus without Spina	*	
maternal alcohol use			Bifida		
Hydrocephalus without Spina	*		Hypospadias	*	
Bifida			Microcephalus	*	
Hypospadias	*		Obstructive genitourinary defect	*	
Obstructive genitourinary defect	*		Patent ductus arteriosus	5	48.97
Patent ductus arteriosus	*		Pulmonary valve atresia and	*	
Pulmonary valve atresia and	*		stenosis		
stenosis			Pyloric stenosis	*	
Reduction deformity, upper limbs	*		Renal agenesis/hypoplasia	*	
Ventricular septal defect	*		Transposition of great arteries	*	
All defects	25		Transposition of great arteries		
GIBSON 1695			Tricuspid valve atresia and	*	
Atrial septal defect	*		stenosis		
Atrioventricular septal defect	*		Ventricular septal defect	5	48.97
	*		All defects	38	
Cleft lip with and without cleft			GRANT 3247		
palate	*		Anencephalus	*	
Cleft palate without cleft lip	*		Anophthalmia/microphthalmia	*	
Congenital hip dislocation			Aortic valve stenosis		
Down syndrome			Atrial septal defect	12	36.96
Hydrocephalus without Spina	•		Atrioventricular septal defect	· •	
Bifida			Autism	· •	
Hypoplastic left heart syndrome	_		Choanal atresia	·	
Hypospadias	_		Cleft lip with and without cleft palate	·	
Microcephalus	_	00.50	Cleft palate without cleft lip	· •	
Obstructive genitourinary defect	5	29.50	Coarctation of aorta	·	
Pulmonary valve atresia and	^		Diaphragmatic hernia		
stenosis			Down syndrome	*	
Pyloric stenosis	*		Gastroschisis	*	
Rectal and large intestinal	^		Hirschsprung's disease (congenital	•	
atresia/stenosis			megacolon)	*	
Reduction deformity, upper limbs	*		Hydrocephalus without Spina Bifida	*	
Renal agenesis/hypoplasia	*		Hypoplastic left heart syndrome	*	00.00
Ventricular septal defect All defects	* 38		Hypospadias	10	30.80
All deletes	00		Microcephalus	*	
			Obstructive genitourinary defect	5	15.40
			Patent ductus arteriosus	7	21.56
			Pulmonary valve atresia and stenosis	8	24.64
			Pyloric stenosis	6	18.48
			Reduction deformity, lower limbs	*	
			Spina bifida without anencephalus	*	
			Transposition of great arteries	*	
			Tricuspid valve atresia and stenosis	*	
			Ventricular septal defect	11	33.88
			All defects	98	

GREENE 1582			HAMILTON 14677		
Aortic valve stenosis	*		Anencephalus	*	
Atrial septal defect	*		Anophthalmia/microphthalmia	*	
Bladder exstrophy	*		Anotia/microtia	*	
Cleft lip with and without cleft palate	*		Aortic valve stenosis	*	
Coarctation of aorta	*		Atrial septal defect	33	22.48
Congenital hip dislocation	*		Atrioventricular septal defect	10	6.81
Diaphragmatic hernia	*		Autism	16	10.90
Ebstein anomaly	*		Biliary atresia	*	
Esophageal	*		Choanal atresia	*	
atresia/tracheoesophageal fistula			Cleft lip with and without cleft	13	8.86
Hypoplastic left heart syndrome	*		palate		
Hypospadias	5	31.61	Cleft palate without cleft lip	*	
Microcephalus	*		Coarctation of aorta	14	9.54
Obstructive genitourinary defect	6	37.93	Common truncus	*	
Patent ductus arteriosus	*		Congenital cataract	*	
Pulmonary valve atresia and stenosis	*		Congenital hip dislocation	14	9.54
Pyloric stenosis	*		Diaphragmatic hernia	5	3.41
Spina bifida without anencephalus	*		Down syndrome	19	12.95
Transposition of great arteries	*		Encephalocele	*	
Ventricular septal defect	5	31.61	Epispadius	*	
All defects HANCOCK 3450	44		Ecophogoal	*	
Atrial septal defect	14	40.58	Esophageal		
Atrioventricular septal defect	*	+0.50	atresia/tracheoesophageal fistula Hirschsprung's disease (congenital	7	4.77
Autism	6	17.39	megacolon)	,	7.77
Biliary atresia	*	17.00	1	*	
Cleft lip with and without cleft palate	*		Hydrocephalus without Spina Bifida		
Cleft palate without cleft lip	*		Hypoplastic left heart syndrome	*	
Coarctation of aorta	*		Hypospadias	66	44.97
Congenital hip dislocation	*		Microcephalus	*	44.57
Diaphragmatic hernia	*		Obstructive genitourinary defect	71	48.38
Down syndrome	*		Patent ductus arteriosus	27	18.40
Esophageal	*		Pulmonary valve atresia and	5	3.41
atresia/tracheoesophageal fistula			stenosis	Ü	0.11
Hydrocephalus without Spina Bifida	*		Pyloric stenosis	23	15.67
Hypoplastic left heart syndrome	*		Rectal and large intestinal	*	10.07
Hypospadias	11	31.88	atresia/stenosis		
Microcephalus	*	0.1.00	Reduction deformity, lower limbs	*	
Obstructive genitourinary defect	11	31.88	Reduction deformity, upper limbs	*	
Patent ductus arteriosus	9	26.09	Renal agenesis/hypoplasia	7	4.77
Pulmonary valve atresia and stenosis	*	_0.00	Spina bifida without anencephalus	*	
Pyloric stenosis	7	20.29	Tetralogy of fallot	*	
Rectal and large intestinal	*		Transposition of great arteries	5	3.41
atresia/stenosis			Tricuspid valve atresia and	*	
Reduction deformity, upper limbs	*		stenosis		
Renal agenesis/hypoplasia	*		Trisomy 13 (Patau syndrome)	*	
Spina bifida without anencephalus	*		Trisomy 18 (Edwards syndrome)	*	
Tetralogy of fallot	*		Ventricular septal defect All defects	63 457	42.92
Transposition of great arteries	*			•	
Tricuspid valve atresia and stenosis	*				
Ventricular septal defect All defects	10 108	28.99			

HARRISON 1776			HENRY 2148		
Atrial septal defect	*		Atrial septal defect	*	
Coarctation of aorta	*		Atrioventricular septal defect	*	
Down syndrome	*		Autism	*	
Hypospadias	*		Cleft lip with and without cleft palate	*	
Microcephalus	*		Cleft palate without cleft lip	*	
Renal agenesis/hypoplasia	*		Coarctation of aorta	*	
Ventricular septal defect All defects	8 18	45.05	Congenital hip dislocation	*	
HENDRICKS 6342			- Esophageal	*	
Anophthalmia/microphthalmia	*		atresia/tracheoesophageal fistula		
Atrial septal defect	18	28.38	Hirschsprung's disease (congenital	*	
Atrioventricular septal defect	*		megacolon)		
Autism	*		Hypoplastic left heart syndrome	*	
Biliary atresia	*		Hypospadias	5	23.28
Cleft lip with and without cleft	*		Microcephalus	*	_00
palate			Obstructive genitourinary defect	7	32.59
Cleft palate without cleft lip	*		Patent ductus arteriosus	*	02.00
Coarctation of aorta	5	7.88	Pulmonary valve atresia and stenosis	*	
Congenital cataract	*	7.00	Pyloric stenosis	5	23.28
Congenital dataract Congenital hip dislocation	5	7.88	<u> </u>	*	20.20
Diaphragmatic hernia	*	7.00	Rectal and large intestinal		
Down syndrome	7	11.04	atresia/stenosis Renal agenesis/hypoplasia	*	
Ebstein anomaly	*	11.04	Trisomy 18 (Edwards syndrome)	*	
	*		Ventricular septal defect	*	
Encephalocele			All defects	47	
Esophageal	*		HUNTINGTON 1889		
atresia/tracheoesophageal fistula			Aortic valve stenosis	*	
Hirschsprung's disease (congenital	*		Atrial septal defect	46	243.52
megacolon)			Atrioventricular septal defect	5	26.47
Hydrocephalus without Spina	*		Autism	*	
Bifida			Biliary atresia	*	
Hypoplastic left heart syndrome	*		Cleft lip with and without cleft palate	5	26.47
Hypospadias	17	26.81	Cleft palate without cleft lip	*	
Microcephalus	7	11.04	Coarctation of aorta	*	
Obstructive genitourinary defect	13	20.50	Down syndrome	*	
Patent ductus arteriosus	19	29.96	Esophageal	*	
Pulmonary valve atresia and	6	9.46	atresia/tracheoesophageal fistula		
stenosis			Fetus or newborn affected by	*	
Pyloric stenosis	14	22.08	maternal alcohol use		
Rectal and large intestinal	*		Hypospadias	11	58.23
atresia/stenosis			Microcephalus	7	37.06
Reduction deformity, upper limbs	*		Obstructive genitourinary defect	*	200
Spina bifida without anencephalus	*		Patent ductus arteriosus	6	31.76
Tetralogy of fallot	*		Pulmonary valve atresia and stenosis	6	31.76
Transposition of great arteries	5	7.88	Pyloric stenosis	5	26.47
Ventricular septal defect All defects	18 164	28.38	Rectal and large intestinal	*	
			atresia/stenosis		
			Spina bifida without anencephalus	*	
			Transposition of great arteries	*	
			Ventricular septal defect	8 123	42.35
			All defects	123	4 4

HOWARD 4551			JASPER 1757		
Atrial septal defect	11	24.17	Atrial septal defect	*	
Atrioventricular septal defect	*		Atrioventricular septal defect	*	
Autism	6	13.18	Autism	*	
Cleft lip with and without cleft	9	19.78	Choanal atresia	*	
palate	Ü	10.70	Cleft lip with and without cleft palate	*	
Cleft palate without cleft lip	*		Cleft palate without cleft lip	*	
Coarctation of aorta	*		Coarctation of aorta	*	
Common truncus	*		Congenital hip dislocation	*	
Congenital hip dislocation	*		Down syndrome	*	
Diaphragmatic hernia	*		-	*	
Down syndrome	6	13.18	Fetus or newborn affected by		
•	*	13.10	maternal alcohol use Gastroschisis	*	
Esophageal				*	
atresia/tracheoesophageal fistula	*		Hydrocephalus without Spina Bifida Hypoplastic left heart syndrome	*	
Fetus or newborn affected by				E	28.46
maternal alcohol use	*		Hypospadias Microcephalus	5 *	20.40
Hirschsprung's disease (congenital			•	*	
megacolon)	*		Obstructive genitourinary defect	*	
Hydrocephalus without Spina			Patent ductus arteriosus	*	
Bifida	*		Pulmonary valve atresia and stenosis	*	
Hypoplastic left heart syndrome	4.4	00.70	Pyloric stenosis	*	
Hypospadias	14 *	30.76	Reduction deformity, lower limbs	*	
Microcephalus		04.47	Reduction deformity, upper limbs	*	
Obstructive genitourinary defect	11	24.17	Renal agenesis/hypoplasia	*	
Patent ductus arteriosus	6	13.18	Spina bifida without anencephalus	*	
Pulmonary valve atresia and			Ventricular septal defect All defects	37	
stenosis			JENNINGS 1567	- 01	
Pyloric stenosis	13	28.57	Atrial septal defect	5	31.91
Rectal and large intestinal	*		Cleft lip with and without cleft palate	*	
atresia/stenosis			Congenital hip dislocation	*	
Reduction deformity, lower limbs	*		Diaphragmatic hernia	*	
Reduction deformity, upper limbs	*		Down syndrome	*	
Spina bifida without anencephalus	*		Ebstein anomaly	*	
Tetralogy of fallot	*		Esophageal	*	
Transposition of great arteries	*		atresia/tracheoesophageal fistula		
Trisomy 13 (Patau syndrome)	*		Hirschsprung's disease (congenital	*	
Ventricular septal defect	11	24.17			
All defects	127		megacolon)		
			Hydrocephalus without Spina	*	
			Bifida		
			Hypospadias	7	44.67
			Microcephalus	*	
			Obstructive genitourinary defect	*	
			Patent ductus arteriosus	*	
			Pulmonary valve atresia and stenosis	*	
			Pyloric stenosis	*	
			Spina bifida without anencephalus	*	
			Tricuspid valve atresia and	*	
			stenosis		
			Ventricular septal defect	*	
			All defects	36	

ACKSON 2363			JOHNSON 6974		
Anencephalus	*		Anophthalmia/microphthalmia	*	
Atrial septal defect	11	46.55	Atrial septal defect	27	38.72
Atrioventricular septal defect	*		Atrioventricular septal defect	*	
Autism	*		Autism	18	25.81
Cleft lip with and without cleft	*		Choanal atresia	*	
palate			Cleft lip with and without cleft	5	7.17
Coarctation of aorta	*		palate		
Congenital hip dislocation	*		Cleft palate without cleft lip	*	
Down syndrome	*		Coarctation of aorta	6	8.60
Fetus or newborn affected by	*		Common truncus	*	
maternal alcohol use			Congenital cataract	*	
Hirschsprung's disease (congenital	*		Congenital hip dislocation	6	8.60
megacolon)			Diaphragmatic hernia	*	
Hydrocephalus without Spina	*		Down syndrome	10	14.34
Bifida			Epispadius	*	
Hypospadias	6	25.39	Esophageal	*	
Microcephalus	*		atresia/tracheoesophageal fistula		
Obstructive genitourinary defect	*		Fetus or newborn affected by	*	
Patent ductus arteriosus	5	21.16	maternal alcohol use		
Pulmonary valve atresia and	*		Gastroschisis	*	
stenosis			Hirschsprung's disease (congenital	*	
Pyloric stenosis	12	50.78	megacolon)		
Rectal and large intestinal	*		Hypoplastic left heart syndrome	*	
atresia/stenosis			Hypospadias	20 *	28.68
Tetralogy of fallot	*		Microcephalus		
Transposition of great arteries	*	00.00	Obstructive genitourinary defect	8	11.47
Ventricular septal defect All defects	8 73	33.86	Patent ductus arteriosus	8	11.47
AY 1214			Pulmonary valve atresia and	*	
Atrial septal defect	9	74.14	stenosis		
Atrioventricular septal defect	*		Pyloric stenosis	18	25.81
Autism	*		Rectal and large intestinal	*	
Cleft lip with and without cleft	*		atresia/stenosis		
palate			Reduction deformity, lower limbs	*	
Diaphragmatic hernia	*		Reduction deformity, upper limbs	*	
Down syndrome	*		Spina bifida without anencephalus	*	
Hypospadias	*		Tetralogy of fallot	6	8.60
Microcephalus	*		Transposition of great arteries	*	
Obstructive genitourinary defect	*		Tricuspid valve atresia and	*	
Patent ductus arteriosus	*		stenosis		
Pulmonary valve atresia and	*		Trisomy 13 (Patau syndrome)	*	
stenosis			Ventricular septal defect All defects	28 205	40.15
Pyloric stenosis	5	41.19	All doloots	_00	
Tetralogy of fallot	*				
Transposition of great arteries	*				
Ventricular septal defect	6	49.42			
All defects	36				

FFERSON 1472			KNOX 1916		
Aortic valve stenosis	*		Anophthalmia/microphthalmia	*	
Atrial septal defect	*		Atrial septal defect	*	
Cleft lip with and without cleft palate	*		Atrioventricular septal defect	*	
Cleft palate without cleft lip	*		Autism	*	
Coarctation of aorta	*		Cleft lip with and without cleft	*	
Diaphragmatic hernia	*		palate		
Down syndrome	*		Coarctation of aorta	*	
Fetus or newborn affected by	*		Down syndrome	*	
maternal alcohol use			Hirschsprung's disease (congenital	*	
Hirschsprung's disease (congenital	*		megacolon)		
megacolon)			Hydrocephalus without Spina	*	
Microcephalus	*		Bifida		
Obstructive genitourinary defect	*		Hypospadias	*	
Patent ductus arteriosus	*		Microcephalus	*	
Pyloric stenosis	*		Obstructive genitourinary defect	*	
Rectal and large intestinal	*		Patent ductus arteriosus	*	
atresia/stenosis			Pulmonary valve atresia and	*	
Ventricular septal defect	*		·		
All defects	23		stenosis		
OSCIUSKO 4374			Pyloric stenosis	*	
Anencephalus	*		Rectal and large intestinal	*	
Anophthalmia/microphthalmia	*		atresia/stenosis		
Aortic valve stenosis	*		Spina bifida without anencephalus	*	
Atrial septal defect	35	80.02	Tetralogy of fallot	*	
Atrioventricular septal defect	*		Transposition of great arteries	*	
Autism	5	11.43	Ventricular septal defect	5	26.10
	7	16	All defects LAWRENCE 2150	39	
Cleft lip with and without cleft palate Cleft palate without cleft lip	7 *	10	Aortic valve stenosis	*	
Coarctation of aorta	*		Atrial septal defect	6	27.91
Congenital cataract	*		Atrioventricular septal defect	*	27.91
Congenital hip dislocation	*		•	*	
Diaphragmatic hernia	*		Cleft lip with and without cleft		
Down syndrome	6	13.72	palate Congenital hip dislocation	*	
-	*	13.72	Diaphragmatic hernia	*	
Esophageal				*	
atresia/tracheoesophageal fistula	*		Esophageal		
Hydrocephalus without Spina Bifida	14	32.01	atresia/tracheoesophageal fistula	*	
Hypospadias Microcephalus		11.43	Hirschsprung's disease (congenital		
•	5 5	11.43	megacolon)	0	41.86
Obstructive genitourinary defect	5 7		Hypospadias	9	41.00
Patent ductus arteriosus		16	Microcephalus	10	EE 01
Pulmonary valve atresia and stenosis	6 15	13.72	Obstructive genitourinary defect Patent ductus arteriosus	12 *	55.81
Pyloric stenosis	15 *	34.29		*	
Reduction deformity, upper limbs	*		Pulmonary valve atresia and		
Spina bifida without anencephalus	*		stenosis	6	07.04
Tetralogy of fallot	*		Pyloric stenosis	6 *	27.91
Tricuspid valve atresia and stenosis	*		Reduction deformity, upper limbs	*	
Tripomy 12 (Potos associations)			Renal agenesis/hypoplasia Tetralogy of fallot	*	
Trisomy 13 (Patau syndrome)	*		i letralogy of failor		
Trisomy 18 (Edwards syndrome)	*	A1 15		*	
Trisomy 18 (Edwards syndrome) Ventricular septal defect	* 18 148	41.15	Transposition of great arteries	*	
Trisomy 18 (Edwards syndrome)	* 18 148	41.15		*	37.21

LA GRANGE	2878		LA PORTE 5356		
Anotia/microtia	*		Atrial septal defect	26	48.54
Aortic valve stenosis	*		Atrioventricular septal defect	*	
Atrial septal defect	10	34.75	Autism	*	
Atrioventricular septal defect	*		Biliary atresia	*	
Biliary atresia	*		Cleft lip with and without cleft	*	
Coarctation of aorta	*		palate		
Diaphragmatic hernia	*		Cleft palate without cleft lip	*	
Down syndrome	*		Coarctation of aorta	6	11.20
Encephalocele	*		Congenital hip dislocation	5	9.34
Hirschsprung's disease (conge	enital *		Diaphragmatic hernia	*	
megacolon)	Jimai		Down syndrome	*	
Hydrocephalus without Spina	*		Esophageal	*	
Bifida			atresia/tracheoesophageal fistula		
Hypoplastic left heart syndrom	ne *		Hydrocephalus without Spina	9	16.80
Hypospadias	5	17.37	Bifida	Ü	10.00
Microcephalus	*	17.07	Hypospadias	20	37.34
Obstructive genitourinary defe	ot *		Microcephalus	6	11.20
Patent ductus arteriosus		20.85	Obstructive genitourinary defect	9	16.80
	6	20.65			
Pulmonary valve atresia and			Patent ductus arteriosus	20	37.34
stenosis			Pulmonary valve atresia and	î	
Pyloric stenosis	· •		stenosis	4-	00.04
Rectal and large intestinal	^		Pyloric stenosis	15	28.01
atresia/stenosis			Rectal and large intestinal	*	
Tetralogy of fallot	*		atresia/stenosis		
Transposition of great arteries	*		Reduction deformity, upper limbs	*	
Tricuspid valve atresia and	*		Renal agenesis/hypoplasia	*	
stenosis			Spina bifida without anencephalus	*	
Ventricular septal defect	9	31.27	Tetralogy of fallot	*	
All defects	60		Tours and addition of annual autorian	+	
			Transposition of great arteries	+	
			Trisomy 13 (Patau syndrome)		
			Trisomy 18 (Edwards syndrome)	· .	
			Ventricular septal defect	24	44.81
			All defects	175	

RION 59613			MARSHALL 2686		
Anencephalus	*		Atrial septal defect	*	
Anophthalmia/microphthalmia	*		Autism	*	
Anotia/microtia	*		Cleft lip with and without cleft	5	18.6
Aortic valve stenosis	13	2.18	palate		
Atrial septal defect	202	33.89	Cleft palate without cleft lip	*	
Atrioventricular septal defect	29	4.86	Coarctation of aorta	*	
Autism	49	8.22	Diaphragmatic hernia	*	
Biliary atresia	11	1.85	Down syndrome	*	
Bladder exstrophy	*		Encephalocele	*	
Choanal atresia	12	2.01	Hirschsprung's disease (congenital	*	
Cleft lip with and without cleft palate	53	8.89	megacolon)		
Cleft palate without cleft lip	40	6.71	Hydrocephalus without Spina	*	
Coarctation of aorta	38	6.37	Bifida	_	
Common truncus		0.04	Hypospadias	8	29.7
Congenital cataract	5	0.84	Microcephalus	*	
Congenital hip dislocation	37	6.21	Obstructive genitourinary defect	×	00.
Diaphragmatic hernia	16	2.68	Patent ductus arteriosus	7 *	26.0
Down syndrome	73	12.25	Pulmonary valve atresia and	•	
Ebstein anomaly	5 *	0.84	stenosis	0	00.
Encephalocele	*		Pyloric stenosis	8	29.7
Epispadius	16	0.60	Reduction deformity, lower limbs	*	
Esophageal	16	2.68	Reduction deformity, upper limbs	*	
atresia/tracheoesophageal fistula	16	2.68	Renal agenesis/hypoplasia	*	
Fetus or newborn affected by	10	2.00	Spina bifida without anencephalus Tetralogy of fallot	*	
maternal alcohol use Gastroschisis	*		Transposition of great arteries	*	
Gastroscriisis	12	2.01	Ventricular septal defect	*	
Hirschsprung's disease (congenital	12	2.01	All defects	67	
megacolon)			MARTIN 498		
Hydrocephalus without Spina Bifida	37	6.21	Atrial septal defect	*	
Hypoplastic left heart syndrome	11	1.85	Atrioventricular septal defect	*	
Hypospadias	177	29.69	Cleft lip with and without cleft	*	
Microcephalus	48	8.05	palate		
Obstructive genitourinary defect	148	24.83	Coarctation of aorta	*	
Patent ductus arteriosus	135	22.65	Congenital cataract	*	
Pulmonary valve atresia and stenosis	49	8.22	Hypospadias	*	
Pyloric stenosis	123	20.63	Pulmonary valve atresia and	*	
Rectal and large intestinal	27	4.53	stenosis		
atresia/stenosis	y.		Pyloric stenosis	*	
Reduction deformity, lower limbs	*	<u>.</u>	Rectal and large intestinal	*	
Reduction deformity, upper limbs	14	2.35	atresia/stenosis	.	
Renal agenesis/hypoplasia	19	3.19	Transposition of great arteries	·	
Spina bifida without anencephalus	20	3.35	Ventricular septal defect All defects	* 13	
Tetralogy of fallot	25	4.19	7 45.55.6	.5	
Transposition of great arteries	35	5.87			
Tricuspid valve atresia and stenosis	5	0.84			
Trisomy 13 (Patau syndrome)	8	1.34			
Trisomy 18 (Edwards syndrome)	8	1.34			
Ventricular septal defect All defects	187 1723	31.37			

MIAMI 1811			MONROE 5100		
Aortic valve stenosis	*		Anophthalmia/microphthalmia	*	
Atrial septal defect	*		Aortic valve stenosis	*	
Cleft palate without cleft lip	*		Atrial septal defect	22	43.14
Hypospadias	5	27.61	Atrioventricular septal defect	*	
Microcephalus	*		Autism	*	
Obstructive genitourinary defect	5	27.61	Bladder exstrophy	*	
Patent ductus arteriosus	*		Cleft lip with and without cleft palate	7	13.73
Pulmonary valve atresia and stenosis	*		Cleft palate without cleft lip	6	11.76
Pyloric stenosis	5	27.61	Coarctation of aorta	*	
Rectal and large intestinal	*		Congenital hip dislocation	*	
atresia/stenosis			Diaphragmatic hernia	*	
Reduction deformity, upper limbs	*		Down syndrome	5	9.80
Renal agenesis/hypoplasia	*		Epispadius	*	
Spina bifida without anencephalus	*		Hirschsprung's disease (congenital	*	
Tetralogy of fallot	*		megacolon)		
Transposition of great arteries	*		Hydrocephalus without Spina Bifida	*	
Tricuspid valve atresia and stenosis	*		Hypoplastic left heart syndrome	*	
Ventricular septal defect	*		Hypospadias	20	39.22
All defects	39		Typospadias	20	00.22
MONTGOMERY 1870			Microcephalus	*	
Atrial septal defect	5	26.74	Obstructive genitourinary defect	11	21.57
Atrioventricular septal defect	*		Patent ductus arteriosus	14	27.45
Autism	*		Pulmonary valve atresia and stenosis	*	
Cleft lip with and without cleft palate	*		Pyloric stenosis	6	11.76
Cleft palate without cleft lip	*		Rectal and large intestinal	*	
Diaphragmatic hernia	*		atresia/stenosis		
Down syndrome	*		Reduction deformity, upper limbs	*	
Ebstein anomaly	*		Renal agenesis/hypoplasia	*	
Fetus or newborn affected by	*		Transposition of great arteries	*	
maternal alcohol use			Ventricular septal defect All defects	18 140	35.29
Hypoplastic left heart syndrome	*		NEWTON 567		
Hypospadias	*		Anotia/microtia	*	
Microcephalus	*		Cleft palate without cleft lip	*	
Obstructive genitourinary defect	*		Coarctation of aorta	*	
Patent ductus arteriosus	*		Down syndrome	*	
Pulmonary valve atresia and stenosis	5	26.74	Hypospadias	*	
Pyloric stenosis	*		Patent ductus arteriosus	*	
Rectal and large intestinal	*		Pyloric stenosis	*	
atresia/stenosis			Ventricular septal defect	6	105.82
Transposition of great arteries	*		All defects	18	
Trisomy 18 (Edwards syndrome)	*				
Ventricular septal defect	*				
All defects	39				

MORGAN 3462			NOBLE 2860		
Aortic valve stenosis	*		Aortic valve stenosis	*	
Atrial septal defect	6	17.33	Atrial septal defect	18	62.94
Atrioventricular septal defect	*		Atrioventricular septal defect	*	
Autism	*		Autism	*	
Biliary atresia	*		Cleft lip with and without cleft palate	6	20.98
Choanal atresia	*		Cleft palate without cleft lip	*	
Cleft lip with and without cleft palate	*		Coarctation of aorta	*	
Cleft palate without cleft lip	*		Congenital cataract	*	
Coarctation of aorta	6	17.33	Congenital hip dislocation	*	
Congenital hip dislocation	*		Diaphragmatic hernia	*	
Diaphragmatic hernia	*		Down syndrome	*	
Down syndrome	*		Fetus or newborn affected by	*	
Esophageal	*		maternal alcohol use		
atresia/tracheoesophageal fistula			Hydrocephalus without Spina Bifida	*	
Fetus or newborn affected by	*		Hypoplastic left heart syndrome	*	
maternal alcohol use			Hypospadias	6	20.98
Hirschsprung's disease (congenital	*		Microcephalus	5	17.48
megacolon)			Obstructive genitourinary defect	*	
Hydrocephalus without Spina Bifida	*		Patent ductus arteriosus	6	20.98
Hypospadias	20	57.77	Pulmonary valve atresia and stenosis	*	_0.00
Microcephalus	*		Pyloric stenosis	7	24.48
Obstructive genitourinary defect	6	17.33	Reduction deformity, lower limbs	*	20
Patent ductus arteriosus	5	14.44	Reduction deformity, upper limbs	*	
Pulmonary valve atresia and stenosis	*		Spina bifida without anencephalus	*	
Pyloric stenosis	10	28.89	Transposition of great arteries	*	
Rectal and large intestinal	*	20.00	Tricuspid valve atresia and	*	
atresia/stenosis			stenosis		
Reduction deformity, upper limbs	*		Ventricular septal defect	14	48.95
Renal agenesis/hypoplasia	*		All defects OWEN 977	105	
Spina bifida without anencephalus	*		Atrial septal defect	6	61.41
Tetralogy of fallot	*		Atrioventricular septal defect	*	01.11
Transposition of great arteries	*		Cleft lip with and without cleft palate	*	
Trisomy 18 (Edwards syndrome)	*		Diaphragmatic hernia	*	
Ventricular septal defect	11	31.77	Down syndrome	*	
All defects	107	01.77	Bown syndrome		
ORANGE 969			Hydrocephalus without Spina Bifida	*	
Atrial septal defect	5	51.60	Hypoplastic left heart syndrome	*	
Atrioventricular septal defect	*		Hypospadias	*	
Choanal atresia	*		Obstructive genitourinary defect	*	
Congenital hip dislocation	*		Pyloric stenosis	7	71.65
Down syndrome	*		Rectal and large intestinal	*	
Hirschsprung's disease (congenital	*		atresia/stenosis		
megacolon)			Reduction deformity, lower limbs	*	
Hydrocephalus without Spina Bifida	*		Reduction deformity, upper limbs	*	
Hypospadias	*		Ventricular septal defect	*	
			All defects	33	
Obstructive genitourinary defect	×		OHIO 247		
Patent ductus arteriosus	×			*	
Pulmonary valve atresia and stenosis	×				
Pyloric stenosis	×				
Transposition of great arteries	*				
Ventricular septal defect	*				
All defects	24				

PORTER 7314			PARKE 741		
Aniridia	*		Atrial septal defect	*	
Anotia/microtia	*		Choanal atresia	*	
Aortic valve stenosis	*		Down syndrome	*	
Atrial septal defect	5	6.84	Ebstein anomaly	*	
Atrioventricular septal defect	*		Obstructive genitourinary defect	*	
Autism	*		Patent ductus arteriosus	*	
Choanal atresia	*		Pulmonary valve atresia and stenosis	*	
Cleft lip with and without cleft	*		Spina bifida without anencephalus	*	
			Ventricular septal defect	*	
palate			All defects	13	
Cleft palate without cleft lip	9	12.31	PERRY 905		
Coarctation of aorta	6	8.20	Atrial septal defect	*	
Congenital cataract	*		Atrioventricular septal defect	*	
Congenital hip dislocation	*		Down syndrome	*	
Down syndrome	12	16.41	Gastroschisis	*	
Epispadius	*		Microcephalus	*	
Esophageal	*		Obstructive genitourinary defect	*	
atresia/tracheoesophageal fistula			Patent ductus arteriosus	*	
Fetus or newborn affected by	*		Pyloric stenosis	*	
maternal alcohol use			Ventricular septal defect All defects	* 14	
Hirschsprung's disease (congenital	*		PIKE 619	14	
megacolon)			Encephalocele	*	
,	*		Esophageal atresia/tracheoesophageal	*	
Hydrocephalus without Spina			fistula		
Bifida			Hirschsprung's disease (congenital	*	
Hypoplastic left heart syndrome	*		megacolon)		
Hypospadias	19	25.98	Hypospadias	*	
Microcephalus	*		Microcephalus	*	
Obstructive genitourinary defect	12	16.41	Obstructive genitourinary defect	6	96.93
Patent ductus arteriosus	7	9.57	Patent ductus arteriosus	*	
Pulmonary valve atresia and	6	8.20	Pyloric stenosis	*	
stenosis			Rectal and large intestinal	*	
Pyloric stenosis	23	31.45	atresia/stenosis Reduction deformity, lower limbs	*	
Rectal and large intestinal	*	011.10	Spina bifida without anencephalus	*	
atresia/stenosis			Tetralogy of fallot	*	
Reduction deformity, lower limbs	*		Transposition of great arteries	*	
Reduction deformity, upper limbs	*		Ventricular septal defect	*	
, ioddollon dolloning, apper iiii.			All defects	26	
Renal agenesis/hypoplasia	*		PULASKI 669		
Spina bifida without anencephalus	*		Atrial septal defect	*	
Tetralogy of fallot	*		Cleft lip with and without cleft	*	
Trisomy 13 (Patau syndrome)	*		palate		
Ventricular septal defect All defects	21 168	28.71	Congenital hip dislocation	*	
	-		Hypospadias	*	
			Microcephalus	*	
			Patent ductus arteriosus	*	
			Pyloric stenosis	*	
			Ventricular septal defect	*	
			All defects	18	

POSEY 1013			RIPLEY 1539		
Atrial septal defect	*		Aortic valve stenosis	*	
Atrioventricular septal defect	*		Atrial septal defect	*	
Coarctation of aorta	*		Cleft palate without cleft lip	*	
Congenital hip dislocation	*		Congenital hip dislocation	*	
Down syndrome	*		Esophageal	*	
Epispadius	*		atresia/tracheoesophageal fistula		
Hypoplastic left heart syndrome	*		Hydrocephalus without Spina	*	
Hypospadias	*		Bifida		
Pulmonary valve atresia and stenosis	*		Hypospadias	*	
Pyloric stenosis	*		Obstructive genitourinary defect	*	
Rectal and large intestinal	*		Patent ductus arteriosus	*	
atresia/stenosis			r atent ductus artenosus		
Transposition of great arteries	*		Pulmonary valve atresia and	*	
Trisomy 13 (Patau syndrome)	*		stenosis		
Ventricular septal defect	*		Pyloric stenosis	*	
All defects	19				
PUTNAM 1581		07.05	Spina bifida without anencephalus	*	
Atrial septal defect	6	37.95	Ventricular septal defect All defects	* 21	
Atrioventricular septal defect	*		RUSH 849	21	
Autism	*		Aortic valve stenosis	*	
Choanal atresia	*		Cleft lip with and without cleft	*	
Cleft lip with and without cleft palate	*		palate		
Cleft palate without cleft lip	*		Coarctation of aorta	*	
Coarctation of aorta	*		Congenital hip dislocation	*	
Down syndrome	5	31.63	Encephalocele	*	
Ebstein anomaly	*	01.00	Hydrocephalus without Spina	*	
Esophageal	*		Bifida		
atresia/tracheoesophageal fistula			Hypoplastic left heart syndrome	*	
Hirschsprung's disease (congenital	*		Hypospadias	5	58.89
megacolon)			Microcephalus	*	00.00
Hypospadias	*		Obstructive genitourinary defect	*	
Microcephalus	*		Patent ductus arteriosus	*	
Obstructive genitourinary defect	*		Pyloric stenosis	*	
Patent ductus arteriosus	*		Rectal and large intestinal	*	
Pulmonary valve atresia and stenosis	*		atresia/stenosis		
Pyloric stenosis	*		Transposition of great arteries	*	
Reduction deformity, lower limbs	*		Ventricular septal defect	*	
rieddclion deformity, lower limbs			All defects	24	
Reduction deformity, upper limbs	*		SCOTT 1238		
Spina bifida without anencephalus	*		Atrial septal defect	6	48.47
Transposition of great arteries	*		Autism	*	
Trisomy 18 (Edwards syndrome)	*		Ebstein anomaly	*	
Ventricular septal defect	*		Hypospadias	*	
All defects	47		Missassala	•	
RANDOLPH 1214	*		Microcephalus	*	
Acric valve stenosis		40.40	Obstructive genitourinary defect	•	
Atrial septal defect	6	49.42	Patent ductus arteriosus	*	
Biliary atresia			Pyloric stenosis	*	
Cleft palate without cleft lip	*		Renal agenesis/hypoplasia	*	
Hypospadias	*		Spina bifida without anencephalus	F	40.00
Obstructive genitourinary defect			Ventricular septal defect All defects	5 25	40.39
Patent ductus arteriosus	*		All doloots	23	
Pyloric stenosis	6	49.42			
Ventricular septal defect	5	41.19			
All defects	26				

ST. JOSEPH 15362			SHELBY 2161		
Anencephalus	*		Aortic valve stenosis	*	
Aniridia	*		Atrial septal defect	12	55.53
Anophthalmia/microphthalmia	*		Atrioventricular septal defect	*	
Anotia/microtia	*		Autism	*	
Aortic valve stenosis	*		Choanal atresia	*	
Atrial septal defect	51	33.20	Cleft lip with and without cleft	*	
Atrioventricular septal defect	9	5.86	palate		
Autism	10	6.51	Cleft palate without cleft lip	*	
Choanal atresia	*	0.01	Coarctation of aorta	*	
Cleft lip with and without cleft	14	9.11	Congenital hip dislocation	*	
palate	• • •	0.11	Diaphragmatic hernia	*	
Cleft palate without cleft lip	14	9.11	Down syndrome	*	
Coarctation of aorta	*	5.11	Esophageal	*	
Common truncus	*		, -		
Congenital cataract	*		atresia/tracheoesophageal fistula	*	
Congenital catalact Congenital hip dislocation	10	6.51	Hydrocephalus without Spina		
Diaphragmatic hernia	*	0.51	Bifida Hypoplastic left heart syndrome	*	
Down syndrome	24	15.62	Hypospadias	6	27.76
Ebstein anomaly	∠ 4 *	13.02	Microcephalus	*	27.76
•	*		·	6	07.76
Encephalocele	0	0.01	Obstructive genitourinary defect Patent ductus arteriosus	6	27.76 23.14
Esophageal	6	3.91		5 *	23.14
atresia/tracheoesophageal fistula	_	0.05	Pulmonary valve atresia and		
Fetus or newborn affected by	5	3.25	stenosis	*	
maternal alcohol use	*		Pyloric stenosis		
Gastroschisis	^ +		Rectal and large intestinal	•	
Hirschsprung's disease (congenital	•		atresia/stenosis	+	
megacolon)		440=	Reduction deformity, upper limbs	<u>.</u>	
Hydrocephalus without Spina	17	11.07	Spina bifida without anencephalus	^ 	0.4.70
Bifida			Ventricular septal defect All defects	14 82	64.78
Hypoplastic left heart syndrome	5	3.25	STARKE 1143		
Hypospadias	34	22.13	Aortic valve stenosis	*	
Microcephalus	13	8.46	Atrial septal defect	*	
Obstructive genitourinary defect	21	13.67	Autism	*	
Patent ductus arteriosus	55	35.80	Fetus or newborn affected by	*	
Pulmonary valve atresia and	11	7.16	maternal alcohol use		
stenosis			Hypoplastic left heart syndrome	*	
Pyloric stenosis	21	13.67	Hypospadias	5	43.74
Rectal and large intestinal	6	3.91	Obstructive genitourinary defect	*	
atresia/stenosis			Pulmonary valve atresia and stenosis	*	
Reduction deformity, lower limbs	*		Pyloric stenosis	*	
Reduction deformity, upper limbs	*		Spina bifida without anencephalus	*	
Renal agenesis/hypoplasia	8	5.21	Tetralogy of fallot	*	
Spina bifida without anencephalus	*	J	Transposition of great arteries	*	
Tetralogy of fallot	8	5.21	Ventricular septal defect	7	61.24
. Strategy Strategy	Ü	5.21	All defects	34	J
Transposition of great arteries	6	3.91			
Tricuspid valve atresia and stenosis	*				
Trisomy 13 (Patau syndrome)	*				
Trisomy 18 (Edwards syndrome)	5	3.25			
Ventricular septal defect	61	39.71			
All defects	455				

SPENCER 932			SULLIVAN 930		
Atrial septal defect	*		Atrial septal defect	*	
Cleft lip with and without cleft palate	*		Autism	*	
Diaphragmatic hernia	*		Cleft palate without cleft lip	*	
Hydrocephalus without Spina Bifida	*		Down syndrome	*	
Hypospadias	*		Hirschsprung's disease (congenital	*	
Obstructive genitourinary defect	*		megacolon)		
Patent ductus arteriosus	*		Hypospadias	5	53.76
Pyloric stenosis	*		Microcephalus	*	
Reduction deformity, upper limbs	*		Obstructive genitourinary defect	*	
Tricuspid valve atresia and stenosis	*		Patent ductus arteriosus	*	
Ventricular septal defect All defects	* 20		Pyloric stenosis	*	
STEUBEN 1661	20		Rectal and large intestinal atresia/stenosis	*	
Aortic valve stenosis	*		Tetralogy of fallot	*	
Atrial septal defect	11	66.23	Ventricular septal defect	*	
7 tanda doptar do roct		00.20	All defects	29	
Atrioventricular septal defect	*		TIPPECANOE 8352		
Autism	*		Aortic valve stenosis	*	
Cleft lip with and without cleft palate	*		Atrial septal defect	*	
Cleft palate without cleft lip	*		Atrioventricular septal defect	*	
Coarctation of aorta	*		Autism	*	
Diaphragmatic hernia	*		Cleft lip with and without cleft palate	6	7.18
Down syndrome	*		Cleft palate without cleft lip	*	
Esophageal	*		Coarctation of aorta	8	9.58
atresia/tracheoesophageal fistula			Common truncus	*	
Hirschsprung's disease (congenital	*		Congenital cataract	*	
megacolon)			Congenital hip dislocation	*	
Hydrocephalus without Spina Bifida	*		Diaphragmatic hernia	*	
Hypospadias	8	48.16	Down syndrome	13	15.57
Microcephalus	*		Ebstein anomaly	*	
Obstructive genitourinary defect	*		Epispadius	*	
Patent ductus arteriosus	*		Esophageal	*	
Pulmonary valve atresia and	•		atresia/tracheoesophageal fistula		
stenosis	0	40.40	Fetus or newborn affected by		
Pyloric stenosis	8	48.16	maternal alcohol use	*	
Rectal and large intestinal			Hydrocephalus without Spina Bifida	*	
atresia/stenosis	*		Hypoplastic left heart syndrome Hypospadias	22	26.34
Reduction deformity, lower limbs Spina bifida without anencephalus	*		Microcephalus	5	5.99
Tetralogy of fallot	*		Obstructive genitourinary defect	24	28.74
Transposition of great arteries	*		Patent ductus arteriosus	18	21.55
Ventricular septal defect	9	54.18		12	14.37
All defects	64	34.10	Pulmonary valve atresia and stenosis	12	14.57
SWITZERLAND 451			Pyloric stenosis	16	19.16
	*		Rectal and large intestinal atresia/stenosis	*	
			Reduction deformity, lower limbs	*	
			Reduction deformity, upper limbs	*	
			Renal agenesis/hypoplasia	*	
			Spina bifida without anencephalus	*	
			Tetralogy of fallot	*	
			Transposition of great arteries	5	5.99
			Trisomy 13 (Patau syndrome)	*	
			Ventricular septal defect	42	50.29
			All defects	238	

TIPT	ON 764			UNION	276		
,	Atrial septal defect	*				*	
	Biliary atresia	*		VANDERBURGH	9658		
l l	Coarctation of aorta	*		Anencephalus		*	
	Down syndrome	*		Anophthalmia/microphthalmia		*	
	Hypoplastic left heart syndrome	*		Anotia/microtia		*	
	Hypospadias	*		Aortic valve stenosis		*	
	Microcephalus	*		Atrial septal defect		16	16.57
	Obstructive genitourinary defect	*		Atrioventricular septal defect		6	6.21
l l	Patent ductus arteriosus	*		Biliary atresia		*	
	Pulmonary valve atresia and	*		Bladder exstrophy		*	
	stenosis			Cleft lip with and without cleft		7	7.25
	Pyloric stenosis	*		palate			
	Spina bifida without anencephalus	*		Cleft palate without cleft lip		6	6.21
	Transposition of great arteries	*		Coarctation of aorta		10	10.35
	Ventricular septal defect	*		Congenital hip dislocation		*	
	All defects	18					
VIGO				Down syndrome		9	9.32
	Anencephalus	*		Ebstein anomaly		*	
	Aortic valve stenosis	*		Encephalocele		*	
	Atrial septal defect	13	24.78	Epispadius		*	
	Atrioventricular septal defect	5	9.53	Esophageal		*	
	Autism	10	19.06	atresia/tracheoesophageal fist	ula		
	Biliary atresia	*		Gastroschisis		*	
,	Bladder exstrophy	*		Hirschsprung's disease (conge	enital	*	
	Cleft lip with and without cleft	*		megacolon)			
	palate			Hydrocephalus without Spina		*	
(Cleft palate without cleft lip	*		Bifida			
	Coarctation of aorta	*		Hypoplastic left heart syndrom	e	*	
	Congenital cataract	*		Hypospadias		27	27.96
	Congenital hip dislocation	5	9.53	Microcephalus		5	5.18
	Down syndrome	8	15.25	Obstructive genitourinary defe	ct	16	16.57
	Hirschsprung's disease (congenital	*		Patent ductus arteriosus		14	14.50
1	megacolon)			Pulmonary valve atresia and		9	9.32
	Hydrocephalus without Spina	*		stenosis			
	Bifida			Pyloric stenosis		28	28.99
l l	Hypospadias	7	13.34	Rectal and large intestinal		*	
	Microcephalus	8	15.25	atresia/stenosis			
	Obstructive genitourinary defect	13	24.78	Reduction deformity, lower limi		*	
	Patent ductus arteriosus	9	17.16	Reduction deformity, upper lim		*	
	Pulmonary valve atresia and	*		Renal agenesis/hypoplasia		5	5.18
	stenosis			Spina bifida without anencepha	alus	5	5.18
	Pyloric stenosis	19	36.22	Tetralogy of fallot		*	
	Rectal and large intestinal	*		Transposition of great arteries		*	
	atresia/stenosis			Trisomy 13 (Patau syndrome)		*	
	Reduction deformity, upper limbs	*		Trisomy 18 (Edwards syndrom	e)	*	
	Renal agenesis/hypoplasia	*		Ventricular septal defect		34	35.20
	Spina bifida without anencephalus	*		All defects		239	
	Tetralogy of fallot	*					
	Transposition of great arteries	*					
	Trisomy 18 (Edwards syndrome)	*					
	Ventricular septal defect	21	40.03				
	All defects	153					

Atrial septal defect			WARREN 354		
runa copia acrost	*		Atrial septal defect	*	
Atrioventricular septal defect	*		Autism	*	
Autism	*		Down syndrome	*	
Down syndrome	*		Hypospadias	*	
Hirschsprung's disease (congenital	*		Patent ductus arteriosus	*	
megacolon)			Transposition of great arteries	*	
Hypospadias	*		Ventricular septal defect	5	141.2
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			All defects	13	
Microcephalus	*		WASHINGTON 1380		
Obstructive genitourinary defect	*		Atrial septal defect	*	
Patent ductus arteriosus	*		Cleft lip with and without cleft palate	*	
Pyloric stenosis	*		Hypospadias	*	
Rectal and large intestinal	*		Patent ductus arteriosus	*	
atresia/stenosis			Tetralogy of fallot	*	
Reduction deformity, upper limbs	*		Ventricular septal defect	*	
			All defects	10	
Spina bifida without anencephalus	*		WAYNE 3565		
Ventricular septal defect	*		Aortic valve stenosis	*	
All defects ABASH 1524	21		Atrial gaptal dafaat	e	40.0
	*		Atrial septal defect	6 *	16.8
Acric valve stenosis		70.40	Atrioventricular septal defect	*	
Atrial septal defect	11	72.18	Autism	*	
Autism	<u>.</u>		Cleft lip with and without cleft	•	
Choanal atresia			palate		
Cleft lip with and without cleft palate	*		Cleft palate without cleft lip		
Cleft palate without cleft lip	*		Coarctation of aorta	*	
Common truncus	*		Congenital hip dislocation	*	
Congenital hip dislocation	*		Down syndrome	*	
Down syndrome	*		Ebstein anomaly	*	
Epispadius	*		Esophageal	*	
Esophageal	*		atresia/tracheoesophageal fistula		
atresia/tracheoesophageal fistula			Hydrocephalus without Spina	*	
Fetus or newborn affected by	*		Bifida		
maternal alcohol use			Hypospadias	*	
Hypoplastic left heart syndrome	*		Microcephalus	*	
Hypospadias	7	45.93	Obstructive genitourinary defect	7	19.0
Microcephalus	*		Patent ductus arteriosus	5	14.0
Obstructive genitourinary defect	*		Pulmonary valve atresia and	5	14.
Patent ductus arteriosus	5	32.81	stenosis		
Pulmonary valve atresia and stenosis	*		Pyloric stenosis	*	
Pyloric stenosis	5	32.81	Rectal and large intestinal	*	
Renal agenesis/hypoplasia	*		atresia/stenosis		
Tetralogy of fallot	*		Renal agenesis/hypoplasia	*	
Transposition of great arteries	*		Spina bifida without anencephalus	*	
Ventricular septal defect	11	72.18	Tetralogy of fallot	*	
	66				
All defects			Transposition of great arteries	*	
All defects					
All defects			Ventricular septal defect All defects	8 69	22.4

WARRICK 2646			WELLS 1423		
Atrial septal defect	*		Atrial septal defect	21	147.58
Atrioventricular septal defect	*		Atrioventricular septal defect	*	
Autism	*		Autism	*	
Choanal atresia	*		Choanal atresia	*	
Cleft lip with and without cleft	*		Cleft lip with and without cleft	*	
palate			palate		
Coarctation of aorta	*		Coarctation of aorta	*	
Congenital hip dislocation	*		Down syndrome	*	
Down syndrome	*		Fetus or newborn affected by	*	
Encephalocele	*		maternal alcohol use		
Hydrocephalus without Spina	*		Hirschsprung's disease (congenital	*	
Bifida			megacolon)		
Hypospadias	14	52.91	Hydrocephalus without Spina	*	
Obstructive genitourinary defect	6	22.68	Bifida		
Patent ductus arteriosus	*		Hypoplastic left heart syndrome	*	
Pulmonary valve atresia and	*		Hypospadias	8	56.22
stenosis			Microcephalus	*	00.22
Pyloric stenosis	5	18.90	Obstructive genitourinary defect	*	
Reduction deformity, upper limbs	*	10.50	Patent ductus arteriosus	7	49.19
Renal agenesis/hypoplasia	*			*	70.10
Tetralogy of fallot	*		Pulmonary valve atresia and stenosis		
Transposition of great arteries	*		Pyloric stenosis	*	
Ventricular septal defect	9	34.01	-	*	
All defects	5 9	34.01	Rectal and large intestinal		
WHITE 1298			atresia/stenosis		
Atrial septal defect	8	61.63	Spina bifida without anencephalus	*	
Atrioventricular septal defect	*		Tetralogy of fallot	*	
Coarctation of aorta	*		Trisomy 18 (Edwards syndrome)	*	
Hudraganhalus without China	*		Ventricular septal defect	15	105.41
Hydrocephalus without Spina			All defects	81	
Bifida			WHITLEY 1593		
Hypospadias	*		Atrial septal defect	11	69.05
Microcephalus	*		Atrioventricular septal defect	*	
Obstructive genitourinary defect	*		Autism	*	
Patent ductus arteriosus	*		Choanal atresia	*	
Pulmonary valve atresia and	*		Cleft lip with and without cleft	*	
stenosis			palate		
Pyloric stenosis	6	46.22	Cleft palate without cleft lip	*	
Spina bifida without anencephalus	*		Coarctation of aorta	*	
Transposition of great arteries	*		Congenital hip dislocation	*	
Ventricular septal defect	*		Down syndrome	*	
All defects	36			*	
			Fetus or newborn affected by	•	
			maternal alcohol use		50.50
			Hypospadias	9	56.50
			Obstructive genitourinary defect		
			Patent ductus arteriosus	*	
			Pulmonary valve atresia and stenosis	*	
			Pyloric stenosis	*	
			Reduction deformity, upper limbs	*	
			Tetralogy of fallot	*	
			Transposition of great arteries	*	
			Ventricular septal defect	10	62.77
			All defects	59	